SANTA MONICA COLLEGE ACADEMIC SENATE
1900 Pico Boulevard Santa Monica, CA 90405
310.434.4611

Curriculum Committee Agenda

Wednesday, December 2, 2026, 3:00 p.m.
Drescher Hall, Loft (3rd Floor, Room 300-E)

Guests and members of the public may attend via Zoom:
https://smc-edu.zoom.us/j/88008685421

Meeting ID: 880 0868 5421

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Find your local number: https://smc-edu.zoom.us/u/kog4GeKXL

Members:

Redelia Shaw, *Chair*
Dione Hodges, *Vice Chair*
Lourdes Arévalo
Jason Beardsley
Walter Butler
Susan Caggiano
Evelyn Chantani
Rachel Demski
Catherine Haradon
Aileen Huang
Justice Isaacs
Sharlene Joachim
Koda Kol
Jesus Lopez
Walt Louie
Karol Lu
Jiale Ma (A.S.)
Emin Menachekanian
Asunta Moisan
Jessica Rodriguez
Gabriel Sanchez (A.S.)
Scott Silverman
Bobby Simmons
Briana Simmons
Lydia Strong
Olivia Vallejo
Audra Wells

Interested Parties:

Stephanie Amerian
Maria Bonin
Department Chairs
Nick Chambers
Kiersten Elliott
Jessie Garcia
Jose Hernandez
Tracie Hunter
Maral Hyeler
Luis Jauregui
Liz Koenig
Kristin Lui-Martinez
Maria Munoz
Stacy Neal
Tamika Phillips
Steven Sedky
Esau Tovar
Paula Cortes (A.S.)
Tammara Whitaker

Ex-Officio Members:

Vicenta Arrizon

(Information items are listed numerically; action items are listed alphabetically)

I. Call to Order and Approval of Agenda

II. Public Comments

Two minutes is allotted to any member of the public who wishes to address the Committee.

III. Announcements

IV. Approval of Minutes (November 18, 2026) 5

V. Chair's Report

VI. Information Items

1. ASCCC Curriculum Committee Training and IDEAA Modules
2. Universal Design for Learning (UDL)
3. UC/Cal-GETC Updates
4. Common Course Numbering (CCN) Updates
5. TOP to CIP Project

(Non-Substantial Changes)

6. Updating the course description (use "the California State Board" as default language referencing state board exams/licensing), and methods of evaluation (removing duplicate language) for the following courses: COSM 10A, COSM 10B, COSM 11A, COSM 11B, COSM 11C, COSM 11D, COSM 11E, COSM 16, COSM 18, and COSM 20.

VII. Action Items

Consent Agenda: SLO Updates Only

a. CIS 36M Adobe Acrobat 13

Consent Agenda: SLO/PLO Mapping

b. Anthropology AA-T 15
c. Business Information Worker 1 Certificate of Achievement 22
d. Geography AA-T 24

Courses

e. ANTHRO 10 Forensic Anthropology
   - Changes: description, SLOs, objectives, content, methods of presentation, methods of evaluation, assignments 27

f. BIOL 30 Fundamentals of Biotechnology 1
   - Changes: description, SLOs, objectives, content, methods of evaluation, textbooks, assignments 30

g. BIOL 31 Fundamentals of Biotechnology 2: From Genes to Proteins
   - Changes: description, SLOs, objectives, content, methods of evaluation, textbooks 33
   - Removing Pre/corequisite CHEM 10 33
   - Distance Education (Hybrid Only) 36

h. BIOL 32 Cell Culture Methods & Techniques
   - Changes: description, SLOs, objectives, content, methods of evaluation, textbooks, minimum qualifications 38
   - Removing prerequisite: BIOL 31 38
   - Adding prerequisites: BIOL 21 or BIOL 30 42

i. BIOL 33 Immunoassay Methods
   - Changes: description, SLOs, objectives, content, methods of evaluation, textbooks, assignments, minimum qualifications 48
   - Removing prerequisite: BIOL 31 48
   - Adding prerequisites: BIOL 3 or BIOL 21 or BIOL 30 or MCRBIO 1 or PHYS 3 51

j. BIOL 36 Quality Control and Assurance
- Changes: description, SLOs, objectives, content, methods of presentation, methods of evaluation, textbooks, assignments 68
- Distance Education (Hybrid Only) 70

k. DANCE 55A World Dance Performance
- Changes: description, SLOs, objectives, content, methods of presentation, methods of evaluation, textbooks, assignments 73
- Removing prerequisite: Audition Required 73
- Removing corequisite: DANCE 10 or ballet, world, or modern dance course (DANCE 11-29, 31-38, 41-44B) 73
- Adding advisories: DANCE 10, 11, 12, 13, 14, 15, 16, 17, 18, 19A, 20, 21A, 21B, 22A, 22B, 24, 24B, 25, 25B, 26A, 26B, 31A, 31B, 32A, 32B, 33A, 33B, 34A, 34B, 41A, 41B, 42A, 42B, 43A, 43B, 44A or 44B 76

l. DANCE 57A World Dance Performance
- Changes: description, SLOs, objectives, content, methods of presentation, methods of evaluation, textbooks, assignments 78
- Removing prerequisite: Audition Required 78
- Removing corequisite: DANCE 10 or ballet, world, or modern dance course (DANCE 11-29, 31-38, 41-44B) 78
- Adding advisories: DANCE 10, 11, 12, 13, 14, 15, 16, 17, 18, 19A, 20, 21A, 21B, 22A, 22B, 24, 24B, 25, 25B, 26A, 26B, 31A, 31B, 32A, 32B, 33A, 33B, 34A, 34B, 41A, 41B, 42A, 42B, 43A, 43B, 44A, or 44B 81

m. FILM 1 Introduction To Cinema
- Changes: hours (3 lecture/1 lab to 2.5 lecture/1.5 lab), no change to units 83

n. FILM 5 Film and Society
- Changes: hours (3 lecture/1 lab to 2.5 lecture/1.5 lab), no change to units 86

o. FILM 6 Gender and Sexuality in Cinema
- Changes: hours (3 lecture/1 lab to 2.5 lecture/1.5 lab), no change to units, assignments 88

p. FILM 7 Race and Ethnicity in Cinema
- Changes: hours (3 lecture/1 lab to 2.5 lecture/1.5 lab), no change to units, assignments 90

q. FILM 8 Popular Film Genres
- Changes: hours (3 lecture/1 lab to 2.5 lecture/1.5 lab), no change to units, SLOs, objectives, assignments 92

r. FILM 9 Film Artists
- Changes: hours (3 lecture/1 lab to 2.5 lecture/1.5 lab), no change to units, assignments: 94

s. FILM 11 Adaptation to Cinema
- Changes: hours (3 lecture/1 lab to 2.5 lecture/1.5 lab), no change to units, assignments: 96

t. SMM 6 Introduction to Climate & Sustainable Food Systems
- New Course 98
- Distance Education (Fully Online/Hybrid) 100

u. SWHS 20 Youth Wellness Coaching and Case Management
- New Course 104
- Distance Education (Fully Online) 106
- Advisory: SWHS 1 109

v. SWHS 95B Youth Wellness Coach Fieldwork

- New Course 110
- Pre/corequisite: SWHS 95 112

Programs

w. Biotechnology & Cell Science Laboratory Technician AS/Certificate of Achievement 113
- Program Type Change: AS/Certificate of Achievement (was only Certificate of Achievement)
- Changes: catalog description, PLOs, SLO/PLO mapping; removing required courses BIOL 35 and MCRBIO 1; adding required course BIOL 36; total units reduced to 35 units (was 40 units)

x. Biotechnology/Life Sciences Laboratory Assistant AS/Certificate of Achievement 116
- Changes: catalog description, PLOs, SLO/PLO mapping; removing required courses BIOL 90B and STAT C1000; adding required course BIOL 36; total units reduced to 21 units (was 24 units)

y. Climate Change and Sustainable Food Systems Certificate of Achievement 118
- New Program

z. Geology AS-T 129
- Changes: catalog description, PLOs, SLO/PLO mapping

aa. Website Development Management Certificate of Achievement..... 131
- Changes: PLOs, SLO/PLO mapping, removing required courses CIS 57 and CIS 88A; adding required course CIS 59A; total units reduced to 12 units (was 13 units)

bb. Changes to degrees, certificates, and program maps as a result of courses considered on this agenda

VIII. New Business

IX. Old Business

X. Adjournment

Please notify Redelia Shaw, Dione Hodges, and Rachel Demski by email if you are unable to attend this meeting.

The next Curriculum Committee meeting is February 17, 2027.

SANTA MONICA COLLEGE ACADEMIC SENATE
1900 Pico Boulevard Santa Monica, CA 90405
310.434.4611

Curriculum Committee Minutes

Wednesday, November 18, 2026, 3:00 p.m.
Drescher Hall, Loft (3rd Floor, Room 300-E)
Zoom (guests/members of the public)

Members Present:

Redelia Shaw, *Chair*	Rachel Demski	Walt Louie	Jessica Rodriguez
Dione Hodges, *Vice Chair*	Aileen Huang	Karol Lu	Scott Silverman
Lourdes Arévalo	Justice Isaacs	Jiale Ma (A.S.)	Bobby Simmons
Walter Butler	Koda Kol	Emin Menachekanian	Olivia Vallejo
Susan Caggiano	Jesus Lopez	Asunta Moisan	Audra Wells
Evelyn Chantani			

Members Absent:

Jason Beardsley	Sharlene Joachim	Briana Simmons	Lydia Strong*
Catherine Haradon	Gabriel Sanchez (A.S.)		

**Attended via Zoom – voting members of the committee unable to attend in-person may join as a guest on zoom but cannot move or vote on action items.*

Others Present:

Keith Graziadei	Samantha Manuel	Howard Stahl	Roberta Wolin-Tupas
Liz Koenig	Eric Oifer	Mark Tomasic	

(Information items are listed numerically; action items are listed alphabetically)

I. Call to Order and Approval of Agenda

The meeting was called to order at 3:12 pm. Motion to approve the agenda with no revisions.
Motion made by: Bobby Simmons; **Seconded by:** Walter Butler
The motion passed unanimously.

II. Public Comments

None

III. Announcements

Our 3rd Annual Toy Drive benefiting the children and families served by the Malibu Community Labor Exchange (MCLE) is happening from November 4-December 3. New, unwrapped toys, sports equipment, or school supplies can be dropped off at the Malibu campus, Emeritus campus, Bundy campus, or SMC Library on the main campus.

The college is hosting “Finding Home” a community forum on affordable housing on December 4 at the Performing Arts Center. The event is free to attend but reservations are required.

IV. Approval of Minutes

Motion to approve the minutes of November 4, 2026 with no revisions.
Motion made by: Scott Silverman; **Seconded by:** Bobby Simmons
The motion passed unanimously.

V. Chair's Report

November is Native American Heritage Month, the college is holding events throughout the month to honor and celebrate. More information is available on the SMC website.

VI. Information Items

1. ASCCC Curriculum Committee Training and IDEAA Modules
   If you've completed the training and received your badges, send an email to Redelia.

2. Universal Design for Learning (UDL)
   No updates

3. UC/Cal-GETC Updates
   No updates

4. Common Course Numbering (CCN) Updates
   No updates

VII. Action Items

Consent Agenda: Deactivations

a. ESL 900 English as a Second Language Level 0

Consent Agenda: SLO/PLO Mapping

b. Clerical/Data Entry Department Certificate
c. Economics AA-T
d. Electronic Medical Records Clerk Department Certificate
e. Hospital Inpatient Coder Department Certificate
f. Legal Administrative Assistant AS/Certificate of Achievement
g. Legal Office Clerk Certificate of Achievement
h. Medical Administrative Assistant AS/Certificate of Achievement
i. Medical Billing/Coding Department Certificate
j. Medical Office Clerk Certificate of Achievement
k. Medical Records Clerk/Receptionist Department Certificate
l. Medical Transcription Department Certificate
m. Social Justice Studies, Gender Studies AA-T

Motion to approve the Consent Agenda: Deactivations and SLO/PLO Mapping with no revisions.
Motion made by: Scott Silverman; **Seconded by:** Dione Hodges
The motion passed unanimously.

Courses

n. COSM 21A Hair Cutting 2
   - Changes: hours/units (1 lecture/0.5 lab/1 unit to 1.5 lecture/0.5 lab/1.5 units), description, SLOs, objectives, content, methods of presentation, methods of evaluation, textbooks, assignments

Motion to approve the changes to COSM 21A with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing), methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation (removing duplicate language).
Motion made by: Dione Hodges; **Seconded by:** Bobby Simmons
The motion passed unanimously.

o. COSM 21B Hair Styling 2
   - Changes: hours/units (1 lecture/0.5 lab/1 unit to 1.5 lecture/0.5 lab/1.5 units), description, SLOs, objectives, content, methods of presentation, methods of evaluation, textbooks, assignments

Motion to approve the changes to COSM 21B with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing),

methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation (removing duplicate language).
Motion made by: Walt Louie; **Seconded by:** Susan Caggiano
The motion passed unanimously.

p. COSM 21C Hair Coloring 2

- Changes: hours/units (1 lecture/0.5 lab/1 unit to 1.5 lecture/0.5 lab/1.5 units), description, SLOs, objectives, content, methods of presentation, methods of evaluation, textbooks, assignments

Motion to approve the changes to COSM 21C with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing), methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation (removing duplicate language).
Motion made by: Scott Silverman; **Seconded by:** Audra Wells
The motion passed unanimously.

q. COSM 21E Curly Hair Techniques 2

- Changes: hours/units (1 lecture/1 lab/1 unit to 2 lecture/0 lab/2 units), description, SLOs, objectives, content, methods of presentation, methods of evaluation, assignments

Motion to approve the changes to COSM 21E with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing), methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation (removing duplicate language).
Motion made by: Dione Hodges; **Seconded by:** Aileen Huang
The motion passed unanimously.

r. COSM 26 Nail Care 2

- Changes: hours/units (1 lecture/1 lab/1 unit to 1.5 lecture/0.5 lab/1.5 units), description, SLOs, objectives, content, methods of evaluation, textbooks, assignments
- Adding Prerequisite: COSM 16

Motion to approve the changes to COSM 26 with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing, and fix “nail care” capitalization), methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation (removing duplicate language).
Motion made by: Scott Silverman; **Seconded by:** Bobby Simmons
The motion passed unanimously.

Motion to approve prerequisite COSM 16 for COSM 26 with no additional revisions.
Motion made by: Audra Wells; **Seconded by:** Scott Silverman
The motion passed unanimously.

s. COSM 28A Skin Care 2A

- Changes: hours/units (1 lecture/1 lab/1 unit to 1.5 lecture/0.5 lab/1.5 units), description, SLOs, objectives, content, methods of presentation, methods of evaluation, textbooks, assignments

Motion to approve the changes to COSM 28A with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing), methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation (removing duplicate language).
Motion made by: Bobby Simmons; **Seconded by:** Scott Silverman
The motion passed unanimously.

t. COSM 28B Skin Care 2B

- Changes: hours/units (1 lecture/1 lab/1 unit to 1.5 lecture/0.5 lab/1.5 units), description, SLOs, objectives, content, methods of presentation, methods of evaluation, textbooks, assignments

Motion to approve the changes to COSM 28B with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing), methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation

(removing duplicate language).
Motion made by: Susan Caggiano; **Seconded by:** Bobby Simmons
The motion passed unanimously.

u. COSM 30 Related Science 3

- Changes: hours/units (1 lecture/0.5 lab/1 unit to 1.5 lecture/0 lab/1.5 units), description, SLOs, objectives, content, methods of presentation, methods of evaluation, textbooks, assignments

Motion to approve the changes to COSM 30 with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing), methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation (removing duplicate language).
Motion made by: Bobby Simmons; **Seconded by:** Walter Butler
The motion passed unanimously.

v. COSM 31A Hair Cutting 3

- Changes: hours/units (1 lecture/1 lab/1 unit to 1.5 lecture/0.5 lab/1.5 units), description, SLOs, objectives, content, methods of presentation, methods of evaluation, textbooks, assignments
- Remove Advisory: COSM 21A

Motion to approve the changes to COSM 30 with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing), methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation (removing duplicate language).
Motion made by: Susan Caggiano; **Seconded by:** Scott Silverman
The motion passed unanimously.

Motion to approve removing advisory COSM 21A from COSM 31A with no additional revisions.
Motion made by: Bobby Simmons; **Seconded by:** Walter Butler
The motion passed unanimously.

w. COSM 31C Hair Coloring 3

- Changes: hours/units (1 lecture/1 lab/1 unit to 1.5 lecture/0.5 lab/1.5 units), description, SLOs, objectives, content, methods of presentation, methods of evaluation, textbooks, assignments

Motion to approve the changes to COSM 31C with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing), methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation (removing duplicate language).
Motion made by: Susan Caggiano; **Seconded by:** Bobby Simmons
The motion passed unanimously.

x. COSM 31E Multi Texture Styling

- Changes: hours/units (1 lecture/1 lab/1 unit to 1.5 lecture/0.5 lab/1.5 units), description, SLOs, objectives, content, methods of presentation, methods of evaluation, textbooks, assignments
- Remove Advisory: COSM 21E

Motion to approve the changes to COSM 31E with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing), methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation (removing duplicate language).
Motion made by: Scott Silverman; **Seconded by:** Walter Butler
The motion passed unanimously.

Motion to approve removing advisory COSM 21E from COSM 31E with no additional revisions.
Motion made by: Olivia Vallejo; **Seconded by:** Susan Caggiano
The motion passed unanimously.

y. COSM 36 Nail Care 3

- Changes: hours/units (1 lecture/1 lab/1 unit to 1.5 lecture/0.5 lab/1.5 units), description, SLOs,

objectives, content, methods of presentation, methods of evaluation, textbooks, assignments
- Remove Advisory: COSM 26

Motion to approve the changes to COSM 36 with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing, and fix “nail care” capitalization), methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation (removing duplicate language).
Motion made by: Bobby Simmons; **Seconded by:** Scott Silverman
The motion passed unanimously.

Motion to approve removing advisory COSM 26 from COSM 36 with no additional revisions.
Motion made by: Olivia Vallejo; **Seconded by:** Evelyn Chantani
The motion passed unanimously.

z. COSM 38 Skin Care 3
- Changes: hours/units (1 lecture/1 lab/1 unit to 1.5 lecture/0.5 lab/1.5 units), description, SLOs, objectives, content, methods of presentation, methods of evaluation, textbooks, assignments

Motion to approve the changes to COSM 38 with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing), methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation (removing duplicate language).
Motion made by: Walt Louie; **Seconded by:** Jesus Lopez
The motion passed unanimously.

aa. COSM 38B Mechanical Exfoliation
- Changes: hours/units (1 lecture/1 lab/1 unit to 1.5 lecture/0.5 lab/1.5 units), description, SLOs, objectives, content, methods of evaluation, textbooks, assignments

Motion to approve the changes to COSM 38B with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing), methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation (removing duplicate language).
Motion made by: Susan Caggiano; **Seconded by:** Aileen Huang
The motion passed unanimously.

bb. COSM 38C Chemical Exfoliation
- Changes: hours/units (1 lecture/1 lab/1 unit to 1.5 lecture/0.5 lab/1.5 units), description, SLOs, objectives, content, methods of evaluation, textbooks, assignments

Motion to approve the changes to COSM 38C with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing), methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation (removing duplicate language).
Motion made by: Susan Caggiano; **Seconded by:** Jesus Lopez
The motion passed unanimously.

cc. COSM 42 Short Hair Cutting
- Changes: hours/units (1 lecture/1 lab/1 unit to 1.5 lecture/0.5 lab/1.5 units), description, SLOs, objectives, content, methods of presentation, methods of evaluation, textbooks, assignments

Motion to approve the changes to COSM 42 with no additional revisions.
Motion made by: Bobby Simmons; **Seconded by:** Scott Silverman
The motion passed unanimously.

dd. COSM 46 Nail Care 4
- Changes: hours/units (1 lecture/1 lab/1 unit to 1.5 lecture/0.5 lab/1.5 units), description, SLOs, objectives, content, methods of presentation, methods of evaluation, textbooks, assignments
- Remove Advisory: COSM 36

Motion to approve the changes to COSM 42 with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing, and fix

"nail care" capitalization), methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation (removing duplicate language).
Motion made by: Scott Silverman; **Seconded by:** Susan Caggiano
The motion passed unanimously.

Motion to approve removing advisory COSM 36 from COSM 46 with no additional revisions.
Motion made by: Scott Silverman; **Seconded by:** Jesus Lopez
The motion passed unanimously.

ee. COSM 48 Skin Care 4

- Changes: hours/units (1 lecture/1 lab/1 unit to 1.5 lecture/0.5 lab/1.5 units), description, SLOs, objectives, content, methods of presentation, methods of evaluation, textbooks, assignments

Motion to approve the changes to COSM 48 with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing), methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation (removing duplicate language).
Motion made by: Scott Silverman; **Seconded by:** Bobby Simmons
The motion passed unanimously.

ff. COSM 48B Make-Up

- Changes: hours/units (1 lecture/1 lab/1 unit to 1.5 lecture/0.5 lab/1.5 units), description, SLOs, objectives, content, methods of evaluation, textbooks, assignments

Motion to approve the changes to COSM 48B with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing, change "intense" to "intensive"), methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation (removing duplicate language).
Motion made by: Scott Silverman; **Seconded by:** Bobby Simmons
The motion passed unanimously.

gg. COSM 77 Barbering

- Changes: hours/units (1 lecture/3 lab/2 units to 3 lecture/1 lab/3 units), description, SLOs, objectives, content, methods of presentation, methods of evaluation, textbooks, assignments, minimum qualifications

Motion to approve the changes to COSM 77 with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing), methods of presentation (change "PowerPoint" to "slide decks"), methods of evaluation (removing duplicate language), and sample assignments (to make language gender neutral).
Motion made by: Aileen Huang; **Seconded by:** Bobby Simmons
The motion passed unanimously.

hh. COSM 78 Barbering 2

- Changes: hours/units (1 lecture/3 lab/2 units to 3 lecture/1 lab/3 units), description, SLOs, objectives, content, methods of presentation, methods of evaluation, textbooks, assignments, minimum qualifications

Motion to approve the changes to COSM 78 with additional revisions to the course description (use "the California State Board" as default language referencing state board exams/licensing), methods of presentation (change "PowerPoint" to "slide decks"), and methods of evaluation (removing duplicate language).
Motion made by: Scott Silverman; **Seconded by:** Walt Louie
The motion passed unanimously.

ii. ECE 75/DANCE 75 Dance for Children: Creative Dance in the Pre-K and Elementary Classroom

- Distance Education (Fully Online/Hybrid)

Motion to approve distance education for ECE 75/DANCE 75 with no additional revisions.
Motion made by: Walter Butler; **Seconded by:** Dione Hodges
The motion passed unanimously.

jj. ETH ST 6 Introduction to Chicana/o/x and Latina/o/x Studies
- Changes: description, SLOs, objectives, content, textbooks, assignments

Motion to approve changes to ETH ST 6 with no additional revisions.
Motion made by: Bobby Simmons; **Seconded by:** Susan Caggiano
The motion passed unanimously.

kk. ETH ST 8 Introduction to Asian American Studies
- Changes: description, SLOs, objectives, content, textbooks, assignments

Motion to approve changes to ETH ST 8 with no additional revisions.
Motion made by: Walt Louie; **Seconded by:** Jesus Lopez
The motion passed unanimously.

ll. ETH ST 9 Introduction to Native American Studies
- Changes: description, SLOs, objectives, content, textbooks, assignments

Motion to approve changes to ETH ST 9 with no additional revisions.
Motion made by: Scott Silverman; **Seconded by:** Koda Kol
The motion passed unanimously.

mm. HIST C1001 United States History to 1877
- Changes: content

Motion to approve changes to HIST C1001 with additional revision to replace “Part 2” with an asterisk to indicate non-template language.
Motion made by: Bobby Simmons; **Seconded by:** Susan Caggiano
The motion passed unanimously.

nn. HIST C1002 United States History since 1865
- Changes: content

Motion to approve changes to HIST C1002 with additional revision to replace “Part 2” with an asterisk to indicate non-template language.
Motion made by: Susan Caggiano; **Seconded by:** Redelia Shaw
The motion passed unanimously.

oo. PHILOS 7 Logic and Critical Thinking
- Changes: SLOSs, objectives, content, methods of presentation, methods of evaluation, assignments

Motion to approve changes to PHILOS 7 with no additional revisions.
Motion made by: Dione Hodges; **Seconded by:** Walt Louie
The motion passed unanimously.

pp. SWHS 10 Social Work and Human Services Seminar
- Distance Education (Fully Online)

Motion to approve distance education for SWHS 10 with no additional revisions.
Motion made by: Scott Silverman; **Seconded by:** Audra Wells
The motion passed unanimously.

Programs

qq. English for US Citizenship Interview Preparation
- New degree/certificate

Motion to approve English for US Citizenship Interview Preparation Noncredit Certificate of Completion with no additional revisions.
Motion made by: Audra Wells; **Seconded by:** Susan Caggiano
The motion passed unanimously.

rr. Changes to degrees, certificates, and program maps as a result of courses considered on this agenda
Motion to approve changes to degrees, certificates, and program maps as a result of courses

considered on this agenda.
Motion made by: Susan Caggiano; **Seconded by:** Bobby Simmons
The motion passed unanimously.

VIII. New Business
None

IX. Old Business
None

X. Adjournment
Motion to adjourn the meeting at 4:55 pm.
Motion made by: Dione Hodges; **Seconded by:** Jesus Lopez
The motion passed unanimously.

SLO Updates Only: COMPUTER APPLICATIONS 36M, Adobe Acrobat

Units:	1.00
Total Instructional Hours (usually 18 per unit):	18.00
Hours per week (full semester equivalent) in Lecture:	1.00
In-Class Lab:	0.00
Arranged:	0.00
Outside-of-Class Hours:	36.00
Transferability:	Transfers to CSU
Degree Applicability:	Credit - Degree Applicable

I. **Catalog Description**
This course introduces students to Adobe Acrobat. Topics include creating portable document files (PDF), working with PDF files, annotation and editing of files and interactive forms, and the distribution and management of PDFs.

II. **Examples of Appropriate Text or Other Required Reading:**
(include all publication dates; for transferable courses at least one text should have been published within the last five years)
1. Adobe Acrobat DC Classroom in a Book, 2018, Adobe Press, Peachpit © 2018

III. **Course Objectives**
Upon completion of this course, the student will be able to:
1. Perform basic file manipulation functions using Acrobat.
2. Identify appropriate techniques for generating, validating, and preparing PDF files for prepress use.
3. Create interactive PDF forms and develop a PDF file distribution and management systems.
4. Determine and apply appropriate problem-solving techniques.

IV. **Methods of Presentation:**
Lecture and Discussion, Observation and Demonstration, Online instructor-provided resources

V. **Course Content**

% of Course	Topic
20.000%	Basic file manipulation functions.
15.000%	PDF files for prepress use.
15.000%	Validating PDF files.
20.000%	Interactive PDF forms.
15.000%	PDF file distribution and management.
15.000%	Critical thinking in the document production process.
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
10%	Class Participation
30%	Exams/Tests: There will be a midterm and final exam.
10%	Final Project
35%	Homework: There will be from 8-10 project assignments

15%	Quizzes
100%	Total

VII. **Sample Assignments:**
Assignment 1: 1) How can you find out which file types can be converted to Adobe PDF using the Create PDF From File command? 2) If you are working with a file type that is not supported by the Create PDF From File or From Multiple Files command, how can you create a PDF file?
Assignment 2: 1) Why would you use PDFMaker to create PDF files? 2) How can you convert an image file to searchable text?

VIII. **Student Learning Outcomes:**
1. Create professional, fillable PDF forms, including the use of digital signatures, security features, and accessibility tools.
2. Export PDF content to Microsoft Office documents and combine documents to create PDF Portfolio.

Santa Monica College
Program of Study
Anthropology AA-T

The Associate in Arts in Anthropology for Transfer (AA-T) involves the critical examination of human societies, both past and present. It provides foundational knowledge about the evolution of humans and is designed to stimulate critical thinking about the ways people live around the world. The required courses encompass the four sub-disciplines of Anthropology. Cultural Anthropology studies human behavior to understand the cultural values that guide people in varied societies. Archaeology examines the material record of human activity in order to understand the behavior of people in the past. Anthropological Linguistics is the study of the human capacity for language and its use. Biological Anthropology is the study of human evolution and human biological diversity.
Upon completion of the Associate in Arts in Anthropology for Transfer (AA-T), students will have a strong academic foundation in the field and be prepared for upper division baccalaureate study. Students who have completed the Associate in Arts for Transfer in Anthropology will have satisfied the lower division requirements for transfer into Anthropology or similar majors in the California State University system.

Program Learning Outcomes:
Develop an integrated understanding of humans and human variation.

- AHIS 11: Demonstrate that representation is a matter of culture by showing how each culture creates specific signs and symbols and a method for delivering them.
- AHIS 71: Engage in interdisciplinary, cross-cultural, and relational thinking through a critical examination of interdisciplinary connections with art globally and throughout history; Contextualizing works of art within their larger social, political, and economic function.
- AHIS 72: Demonstrate that representation is a matter of culture by showing how each culture and period utilized specific signs and symbols and a method for delivering them.
- AHIS 72: Produce examples from the art of this course and explain how they were not only receptors of culture, society and environment, but also creators of that very culture.
- ANATMY 1: Name the systems of the human body, their general functions, the major organs that make up these systems and the general contribution each organ makes to the system.
- ANTHRO 1: Describe how evolutionary processes have shaped the human species.
- ANTHRO 1: Describe the taxonomic diversity of primates, including major biological, behavioral, and ecological adaptations.
- ANTHRO 1: Explain the role of primate and hominin fossils in understanding human origins.
- ANTHRO 10: Apply anthropological methods to reconstruct an individual's biological profile from their skeletal remains.
- ANTHRO 14: Evaluate how gender and sexuality is constructed and maintained in different cultural contexts throughout the world.
- ANTHRO 14: Analyze the relationship between biological and socio-cultural constructs of gender and sexuality.
- ANTHRO 21: Evaluate how multiculturalism is interconnected with economic, political, and social systems.
- ANTHRO 22: Given a specific cultural context, students will describe how religion and religious rituals guide individuals through crises and thereby create solidarity within a society.
- ANTHRO 3: The student will be able to decide which of the various debates aimed at explaining human behavior appears more logical.
- ANTHRO 7: Analyze components of any given language from a cross-cultural perspective.
- COM ST 14: Identify/describe the elements of performance in oral interpretation.
- COM ST 14: Analyze performances in different cultural contexts.
- DANCE 2: Students will be able to identify styles and influences of western and non western cultural dances and describe various impact of social and political influence upon dance in American culture.
- ECE 11: Describe socialization of the child focusing on the interrelationship of family, culture, teachers, and the community.
- ENGL 34: Upon completion of the course, students will delineate the development of Afro-American literature as it reflects and responds to the changing political, economic, and social contexts over the course of American history.
- ENGL 41: Identify and describe major historical, cultural, and aesthetic themes of Asian American literature.
- ENGL 53: Upon completion of the course, students will delineate the development of Latino-American literature as it reflects and responds to the changing political, economic, and social contexts over the course of American history.
- ENGL 54: Upon completion of this course, students will trace, document, and appreciate how indigenous literatures – from oral traditions to written text to performance – have responded to and been integral to shifting sociopolitical contexts and changes to both the physical and metaphysical landscapes of North America.

- ENGL C1001: Reflect critically on one's own thought processes to identify and avoid cognitive biases and common fallacies of language and thought.
- GEOG 11: Evaluate the rationale behind and limitations of various schemes for regionalizing our understanding of the world – for defining and applying concepts such as Eastern Europe, Latin America, Africa, and South Asia when interpreting contemporary issues and events.
- GEOG 14: Students will be able to evaluate California's diverse physical and human landscapes and understand the forces that are changing them.
- GEOG 2: Students will evaluate, from a geographic perspective, humanity's continuing work to make and maintain our home on planet Earth—that is, to think about patterns and processes of human inhabitance, through periods of agricultural and industrial revolution, in terms of space, place, and the cultural landscape.
- GEOG 8: Students will apply historical-geographical and theoretical insight to discussions of present-day issues such as housing, transportation, urban development, gentrification, segregation, and policies to reform suburban sprawl.
- HIST 33: Describe and discuss, orally and/or in writing, the origins of humanity in prehistory and early patterns of land use; major developments in the civilizations of Africa, Asia, Europe, the Middle East, and the Americas from their origins through early modern times; the development and spread of major world religions; and transformations in inter-regional relations including migration, biological exchange, conquest, trade, and technological and cultural exchange.
- HIST 34: Describe and discuss, orally and/or in writing, the establishment and impact of global empires from their origins to political disunion, technological change and industrialization, the emergence and impact of competing economic and political ideologies, the twentieth-century experiences of global war, and the momentum and resistance to contemporary globalization in Africa, the Americas, Asia, Europe, and the Middle East.
- HIST 38: DDescribe and discuss, orally and/or in writing, the social, cultural, and regional identities of African societies until colonial conquest in their diversity and depth, specifically: ancient Egypt and its successor states; the Bantu migrations and Iron Age across Africa; Central African kingship and states; the spread of Islam and early Christianity; medieval West African empires and oral tradition; Swahili city-states; the Atlantic slave trade and implications in Africa; West African forest states and acephalous societies; early Dutch settlement and societies and kingdoms of southern Africa in the 19th century; and the 19th-century jihadist movements of the Sahel.
- HIST 39: Describe and discuss, orally and/or in writing, sub-Saharan Africa's internal social, ethno-linguistic,and political diversity, especially until colonial conquest; the variety of foreign interests in Africa during and after colonialism; the various experiences of early resistance and independence movements; post-colonial economic and political challenges as a legacy of the colonial past and global context; Africans' involvement with global events such as the world wars and Cold War; and contemporary issues including shifting dynamics in gender, religion, urban, and rural life.
- HIST 41: Describe and discuss, orally and/or in writing, the development, and experience of relations between Native and European Americans in the colonial and early national periods from the perspectives of each; Native-American roles in the Revolution, Civil, and World Wars; US Indian policy including Removal, reservations, and Americanization; Native American strategies of freedom related to US policies, acculturation, urbanization, and industrialization; and the Civil Rights movement of the 20th and 21st centuries.
- HIST 42: Describe and discuss, orally and/or in writing, the historical background of the major Latino demographic groups prior to immigration; the historic context for each group's immigration, including immigration policies; each group's strategies of adaptation and resistance to external perceptions from arrival through contemporary issues including education, labor, border policies, and coalition building.
- HIST 43: Describe and discuss, orally and/or in writing, the historical background of Mexican Americans prior to the Treaty of Guadalupe Hidalgo; post-conquest issues, government policies, and Mexican American responses, including the creation of Mexican American identity and community; late-19th and 20th-century patterns of migration and immigration, including evolving immigration policies; Mexican American experiences of modernity, depression, and the major US wars; the Chicano movement and other resistance and adaptations to external perceptions; and contemporary issues including education, labor, political participation, and border policies.
- HIST 62: Describe and discuss, orally and/or in writing, the historical background of the major Asian American demographic groups prior to immigration; their experiences of immigration and initial arrival in the US; and strategies of adaptation and resistance to external perceptions from then to twenty-first century transnational and domestic issues.
- MEDIA 10: Analyze and articulate concepts such as media and racism, anti-racism as part of media literacy, media and equity, media as a system of racialization, ethnocentrism in media, decolonizing media and visual activism, white supremacy and media, race and ethnicity, and media, globalization, and cultural imperialism as analyzed in any one or more of the following: Native American Studies, African American Studies, Asian American Studies, and Latina and Latino American Studies.

- MEDIA 10: Critically analyze the intersection of race and racism as they relate to media, class, gender, sexuality, religion, spirituality, national origin, immigration status, ability, tribal citizenship, sovereignty, language, and/or age in Native American, African American, Asian American, and/or Latina and Latino American communities.
- MUSIC 33: Analyze the major sociopolitical and cultural implications that shaped the development of the music.
- MUSIC 37: Describe important aspects of the historical experience and musical traditions of five broad constituent groups: African Americans, European Americans, Latino Americans, Native Americans and Asian Americans.
- NUTR 7: Evaluate the influence of the complex historical and contemporary factors affecting food choices and practices among various American ethnic groups and their impact on the American economy.
- NUTR 7: Evaluate current research and findings related to the impact of food practices on the health status of various American ethnic groups
- POL SC 21: Demonstrate through oral and/or written work knowledge of basic political science concepts including: the social construction of racial and ethnic groups in American society and their relationship to local, state, and national government, the problems of assimilation and integration into the political system, the politics of exclusion, discrimination, voting behavior and pressure group politics, ideology, resistance and political action, the poor and the culture of poverty, political problems of the aged, the young, women, gay, lesbian, bisexual, and transgendered.
- POL SC 5: Demonstrate through oral and/or written work knowledge of the course content: the recent history of domestic U.S. and international economic relations, and contending theoretical perspectives on the politics of economics, substantive issue areas and public policy concerns.
- SOCIOL 1: Demonstrate through oral and/or written work knowledge of the course content: both macro and micro sociological theory, the methods of sociological inquiry, cultural development, the process of socialization, social structure, social stratification particularly in the areas of social class, race and ethnicity, and gender and social change.
- SOCIOL 30: Demonstrate through oral and written work knowledge of the course content: the processes of the social construction of African American identity, the social, cultural, political, and economic conditions experienced by African Americans in the United States, the interconnections between race, ethnicity, social class, gender, and other systems of inequality, the common issues, coalitions, and conflicts among African Americans and other groups, the distinction between discrimination and prejudice and between direct and indirect institutional discrimination, the relevant laws, social policies, and economic changes that have impacted these groups, and the effectiveness of African American social movements.
- SOCIOL 31: Demonstrate through oral and written work knowledge of the course content: the processes of the social construction of Latina/o identity, the demographic characteristics of the various Latina/o groups, the experiences of these groups, the interconnections between race, ethnicity, social class, gender, and documented status, the common issues, coalitions, and conflicts among Latinas/os and other groups, the distinction between discrimination and prejudice and between direct and indirect institutional discrimination, the relevant laws, social policies, and economic changes that have impacted these groups, and the effectiveness of Latina/o social movements.
- SOCIOL 32: Demonstrate through oral and/or written work knowledge of the course content: the processes of the social construction of Asian/Pacific identity, the demographic characteristics of the various Asian/Pacific groups, the experiences of these groups, the interconnections between race, ethnicity, social class, and gender, the common issues, coalitions, and conflicts among Asian/Pacific populations and other groups, the distinction between discrimination and prejudice and between direct and indirect institutional discrimination, the relevant laws, social policies, and economic changes that have impacted these groups.
- URBAN 8: Students will apply historical-geographical and theoretical insight to discussions of present-day issues such as housing, transportation, urban development, gentrification, segregation, and policies to reform suburban sprawl.
- URBAN 8: Students will compile and analyze a variety of demographic and socio-economic data, in combination with visual and textual sources, to describe and evaluate specific urban settings and situations.

Explore the concepts, theories, and methodologies anthropologists use to analyze human behavior.

- AHIS 11: Demonstrate that representation is a matter of culture by showing how each culture creates specific signs and symbols and a method for delivering them.
- AHIS 71: Engage in interdisciplinary, cross-cultural, and relational thinking through a critical examination of interdisciplinary connections with art globally and throughout history; Contextualizing works of art within their larger social, political, and economic function.
- AHIS 71: Demonstrate that contemporary visual culture is not random but on the contrary a mediated chain of material signifiers that is both historically and culturally embedded.
- AHIS 72: Demonstrate that representation is a matter of culture by showing how each culture and period utilized specific signs and symbols and a method for delivering them.
- AHIS 72: Produce examples from the art of this course and explain how they were not only receptors of culture, society and environment, but also creators of that very culture.

- ANTHRO 19: Evaluate the different anthropological approaches (biocultural, symbolic, material) to the study of food systems worldwide.
- ANTHRO 2: Evaluate how culture is constructed and maintained within different cultural contexts throughout the world.
- ANTHRO 2: Evaluate and analyze the variety of solutions employed by different cultures to cope with basic human problems in different environmental conditions.
- ANTHRO 20: To examine the approach and methods of socio-cultural anthropology to the study of traditional peoples and cultures of Africa.
- ANTHRO 35S: Develop an incipient understanding in reconstructing human behavior from the ephemeral remains identified by archaeologists.
- ANTHRO 4: Develop and execute a scientific research design.
- COM ST 14: Identify/describe the elements of performance in oral interpretation.
- COM ST 37: Identify and describe theories related to intercultural communication.
- COM ST 37: Apply intercultural communication theories and concepts to different cultural contexts.
- ENGL 31: The student will evaluate a series of rhetorical strategies, determine which one is most appropriate for a specific assignment, and write a critical essay of at least 1000 words that is sound in logic and organization, appropriate to the audience, and that demonstrates a clear, direct personal voice. As assessed by: essay exams, essays demonstrating critical analysis, research projects
- GEOG 20: Students will interpret different types of spatial data and maps in terms of their scale, projection, and coordinate systems.
- GEOG 20: Students will differentiate between vector, raster, and object-oriented GIS data structures, and execute various methods of data acquisition from online geospatial data portals.
- HIST 39: Demonstrate the ability to interpret historical information by applying analytical skills used by historians—such as synthesizing evidence from both primary and secondary sources, comparing and contrasting multiple perspectives, contextualizing information, and/or identifying causes and effects of change and continuity—to the course content.
- HIST 39: Demonstrate the value of historical knowledge for understanding more recent and/or comparable issues, events, and trends.
- HIST 47: Critically examine historical material, including primary sources, attentive to such concepts as historical agency, context, perspective, and multi-causation.
- PHILOS 6: Demonstrate proficiency in the research, analytical, and communication skills necessary to present, orally and/or in writing, compelling and original arguments that analyze and critique the central concepts and methodologies of science and discuss how these concepts and methodologies have changed over time.
- PSYCH 7: Demonstrate a thorough understanding of numerous research methods used in modern psychological science.
- STAT C1000: *When given a data set, analyze the data set and design a presentation of the information using tables, graphs and statistical calculations.
- STAT C1000: *When given sample data, decide on and use appropriate estimation strategies to make inferences about the important characteristics of population data, including the mean, proportion and variation
- STAT C1000: *When given sample data, decide on and use an appropriate test to reach conclusions about a hypothesis made about a population parameter.

Discover how anthropology can be used to address contemporary issues.

- ANTHRO 1: Describe how evolutionary processes have shaped the human species.
- ANTHRO 1: Describe the taxonomic diversity of primates, including major biological, behavioral, and ecological adaptations.
- ANTHRO 1: Explain the role of primate and hominin fossils in understanding human origins.
- ANTHRO 5: Describe how evolutionary processes have shaped the human species.
- ANTHRO 5: Describe the taxonomic diversity of primates, including major biological, behavioral, and ecological adaptations.
- ANTHRO 5: Explain the role of primate and hominin fossils in understanding human origins.
- ANTHRO 9: Demonstrate how evolutionary theory forms an explanatory framework of all biological processes.
- ANTHRO 9: Evaluate the fossil, genetic, and archaeological evidence for the evolution of human lineage.
- GEOL 4: Demonstrate a conceptual understanding of fundamental geologic concepts, principles, and interactions of Earth's systems.
- GEOL 5: Students will discuss how changes on Earth's surface over geologic time correlate with mass extinctions and evolutionary advances.
- GEOL 5: Students will apply relative and absolute age dating principles to reconstruct the geologic history of a geologic setting.

Use an evolutionary framework to investigate humans and non-human primates.

- AHIS 71: Engage in interdisciplinary, cross-cultural, and relational thinking through a critical examination of interdisciplinary connections with art globally and throughout history; Contextualizing works of art within their larger social, political, and economic function.
- ANATMY 1: Demonstrate confidence in their understanding of biological concepts and the scientific method to evaluate and critique current media or a scientific report.
- ANTHRO 1: Describe the taxonomic diversity of primates, including major biological, behavioral, and ecological adaptations.
- ANTHRO 14: Evaluate how gender and sexuality is constructed and maintained in different cultural contexts throughout the world.
- ANTHRO 19: Evaluate how culture shapes the production, consumption, and distribution of food within varied cultural contexts throughout the world.
- ANTHRO 20: To investigate and analyze the wide variety of solutions employed by different African cultures to cope with basic human problems in very different environmental conditions.
- COM ST 37: Demonstrate effective intercultural communication skills.
- ECON 5: Demonstrate a level of engagement in the subject matter that enables and motivates the integration of acquired knowledge and skills beyond the classroom.
- ENGL 10: 2. Upon completion of the course, students will demonstrate how race and ethnicity in US Literature helps reflect upon the American experience, specifically in the creation of identity and community.
- ENGL 54: Upon completion of the course, students will be able to identify, analyze, and archive the varied cultural and aesthetic themes found in historical and contemporary works by indigenous authors.
- ENGL 9: Upon completion of the course, the student will be able to identify and analyze how the literature depicts issues relating to assimilation and identity, family, class, and gender among the various peoples of California.
- FILM 7: Describe the shifting notions of race and ethnicity, and the role cinema has played in constructing, reinforcing, and challenging those notions in a variety of contexts.
- GEOG 11: Identify and locate major cultural and environmental features on regional- and global-scale maps.
- GEOG 11: Evaluate the rationale behind and limitations of various schemes for regionalizing our understanding of the world – for defining and applying concepts such as Eastern Europe, Latin America, Africa, and South Asia when interpreting contemporary issues and events.
- GEOG 14: Students will demonstrate a better understanding of the diversity and change that make California unique.
- GEOG 8: Students will understand core concepts in urban geography, and urban studies more broadly, and apply them within a variety of local, national, and global contexts.
- GLOBAL 10: Demonstrate through oral and/or written work knowledge of the course content: the origin, scope, interconnectedness, and consequences of selected global issues, as well as the multiple perspectives/approaches that seek to understand the dynamics of these issues.
- GLOBAL 11: Evaluate the rationale behind and limitations of various schemes for regionalizing our understanding of the world – for defining and applying concepts such as Eastern Europe, Latin America, Africa, and South Asia when interpreting contemporary issues and events.
- GLOBAL 5: Demonstrate a level of engagement in the subject matter that enables and motivates the integration of acquired knowledge and skills beyond the classroom.
- HIST 10: Demonstrate the value of historical knowledge for understanding more recent and/or comparable issues, events, and trends.
- HIST 16: Demonstrate the value of historical knowledge for understanding more recent and/or comparable issues, events, and trends.
- NUTR 7: Develop strategies for respectful interactions and delivery of culturally competent health care that shows appreciation for differing cultural values, health and religious beliefs, and nutrition practices.
- SOCIOL 2 S: Demonstrate through oral and/or written work and community service knowledge of the course content: issues such as global inequality, environmental destruction, urban deterioration, economic and political power distribution, poverty, racism, sexism, and problems of work, family, education, drugs, and crime, as well as the theoretical perspectives of sociology and current sociological research.
- SOCIOL 34: Demonstrate proficiency in the research, analytical, and communication skills necessary to present, orally and in writing, compelling and original arguments that utilize the dominant sociological paradigms to identify and analyze the social forces impacting racial and ethnic relations in American society and propose sociologically informed alternative scenarios for the future of racial and ethnic relations in this society.

Required Core (minimum 9 units):	**Units: 9.0**
ANTHRO 1[DE] Biological Anthropology	3.0
OR	
ANTHRO 5[DE] Biological Anthropology with Lab	4.0

ANTHRO 2[DE] Cultural Anthropology	3.0
ANTHRO 4[DE] Methods of Archaeology	3.0

Area A: Select at least one of the following courses (3 units required):	**Units: 3.0**
ANTHRO 7[DE] Introduction To Linguistic Anthropology	3.0
ANTHRO 22[DE] Magic, Religion, and Witchcraft	3.0
ENGL C1001[DE] Critical Thinking and Writing (formerly ENGL 2)	3.0
ENGL 31[DE] Advanced Composition	3.0
GEOG 1[DE] Physical Geography	3.0
GEOG 2[DE] Introduction To Human Geography	3.0
HIST 47 The Practice of History	3.0
STAT C1000[DE] Introduction to Statistics (formerly MATH 54)	4.0

Area B: Select at least one of the following courses (3 units required):	**Units: 3.0**
ANY COURSE NOT USED IN AREA A	
ANATMY 1[DE] General Human Anatomy	4.0
GEOG 20[DE] Introduction to Geographic Information Systems *Same as: GIS 20*	3.0
GEOL 4[DE] Physical Geology with Lab	4.0
GEOL 5[DE] Historical Geology with Lab	4.0
PHILOS 6[DE] Philosophy Of Science	3.0
PSYCH 7[DE] Research Methods in Psychology	3.0

Area C: Select at least one of the following courses (3 units required):	**Units: 3.0**
ANY COURSE NOT USED FOR AREA A OR AREA B	
ANTHRO 3[DE] World Archaeology	3.0
ANTHRO 9[DE] Paleoanthropology	3.0
ANTHRO 10[DE] Forensic Anthropology	3.0
ANTHRO 14[DE] Sex, Gender, and Culture	3.0
ANTHRO 19[DE] The Culture of Food	3.0
ANTHRO 20 Traditional Peoples and Cultures of Africa	3.0
ANTHRO 21 Peoples and Power in Latin America	3.0
ANTHRO 35S Archaeological Field Techniques	3.0
AHIS 11[DE] Art Appreciation: Introduction to Global Visual Culture	3.0
AHIS 71[DE] African American Art History	3.0
AHIS 72[DE] American Art History	3.0
COM ST 14[DE] Oral Interpretation: Performing Literature Across Cultures	3.0
COM ST 37[DE] Intercultural Communication	3.0
DANCE 2[DE] Dance in American Culture	3.0
ECE 11[DE] Child, Family and Community	3.0
ECON 5[DE] International Political Economy: Introduction To Global Studies *Same as: GLOBAL 5 , POL SC 5*	3.0
ENGL 9[DE] Literature of California	3.0
ENGL 10 Race and Ethnicity in Literature of the U.S.	3.0
ENGL 34[DE] Afro-American Literature	3.0
ENGL 41[DE] Introduction to Asian American Literature	3.0
ENGL 53 Latino Literature in the United States	3.0
ENGL 54 Indigenous Literatures of North America	3.0
FILM 7[DE] Race and Ethnicity in Cinema	3.0
GEOG 8[DE] Introduction to Urban Studies *Same as: URBAN 8*	3.0
GEOG 11[DE] World Geography: Introduction to Global Studies *Same as: GLOBAL 11*	3.0
GEOG 14[DE] Geography of California	3.0
GLOBAL 5[DE] International Political Economy: Introduction To Global Studies *Same as: ECON 5 , POL SC 5*	3.0
GLOBAL 10[DE] Global Issues	3.0
GLOBAL 11[DE] World Geography: Introduction to Global Studies *Same as: GEOG 11*	3.0
HIST 10[DE] Ethnicity and American Culture	3.0
HIST 16[DE] African-American History	3.0
HIST 33[DE] World Civilizations I	3.0
HIST 34[DE] World Civilizations II	3.0
HIST 38[DE] African History I	3.0
HIST 39[DE] African History II	3.0
HIST 41[DE] Native-American History	3.0
HIST 42[DE] The Latina/o Experience in the United States	3.0
HIST 43[DE] Mexican-American History	3.0

HIST 62[DE] Asian-American History	3.0
MEDIA 10[DE] Media, Gender, and Race	3.0
MUSIC 33[DE] Jazz in American Culture	3.0
MUSIC 37[DE] Music in American Culture	3.0
NUTR 7[DE] Food and Culture in America	3.0
POL SC 5[DE] International Political Economy: Introduction To Global Studies *Same as: ECON 5 , GLOBAL 5*	3.0
POL SC 21[DE] Race, Ethnicity, and the Politics of Difference	3.0
SOCIOL 1[DE] Introduction to Sociology	3.0
SOCIOL 1 S Introduction to Sociology - Service Learning	3.0
SOCIOL 2[DE] Social Problems	3.0
SOCIOL 2 S Social Problems -- Service Learning	3.0
SOCIOL 30[DE] African Americans in Contemporary Society	3.0
SOCIOL 31[DE] Latinas/os in Contemporary Society	3.0
SOCIOL 32[DE] Asian Americans In Contemporary Society	3.0
SOCIOL 34[DE] Racial and Ethnic Relations in American Society	3.0
URBAN 8[DE] Introduction to Urban Studies *Same as: GEOG 8*	3.0

Total: 18.0

Santa Monica College
Program of Study
Business Information Worker 1 Certificate of Achievement

The Business Information Worker (BIW) program prepares students for entry-level office and administrative support in a variety of job positions, including general office clerks, retail salespersons, customer service representatives, receptionists, and information clerks. Students learn basic oral and written communications, basic computer application skills, including beginning Excel, Word, and Outlook, and the fundamentals of computer systems. Graduates of this program bring critical thinking and problem solving skills as well as interpersonal skills essential to the workplace. With a solid foundation in Microsoft Windows and Office, as well as strong digital and web literacy skills, students will be prepared to meet the workforce demands of today's business environment.

Program Learning Outcomes:

Demonstrate proficiency in Windows, Microsoft Office applications, as well as strong digital and web literacy skills.

- CIS 1: Compare and contrast the positive and negative impacts of technology on society, and evaluate current trends in personal privacy and computer security.
- CIS 1: Use browsers to access, evaluate, and interpret ideas, images, and information, and use web-based applications to create documents and spreadsheets.
- CIS 30: Create, sort, and query a worksheet database for a variety of data analysis projects.
- CIS 30: Create professional workbooks for financial analysis, including formulas and function, charts, and macros.
- CIS 37: Create business correspondence using advanced word-processing techniques to produce clear, accurate, and professionally formatted documents.
- CIS 37: Integrate automation tools such as mail merge, form fields, tables, and macros to streamline document workflows and enhance productivity in a professional setting.
- CIS 39: Integrate advanced features such as mail merge, rules, and automation tools to improve efficiency and optimize communication workflows across multiple applications.
- CIS 39: Create and manage email, contacts, and folders using electronic communication and organizational tools for effective workplace communication.
- CIS 39: Use calendar, task, and automation features to schedule, coordinate, and manage appointments, meetings, and projects efficiently.

Apply professional communication techniques in an office environment.

- BUS 32: Demonstrate a level of engagement in the subject matter that reveals their understanding of the value of the course content beyond the task itself, specifically as it relates to linking the relevance of course content to careers in business and accounting and their personal lives.
- BUS 32: Write common business messages such as letters, memos, and e-mails that are clear, complete, concise, courteous, considerate, and correct.
- BUS 32: Compose a formal analytical business research report that is based on primary and secondary research and that is clear, complete, courteous, considerate and correct.
- BUS 32: Deliver a business presentation that is clear, complete, concise, considerate, and correct.
- CIS 1: Compare and contrast the positive and negative impacts of technology on society, and evaluate current trends in personal privacy and computer security.
- CIS 1: Use browsers to access, evaluate, and interpret ideas, images, and information, and use web-based applications to create documents and spreadsheets.
- CIS 30: Create, sort, and query a worksheet database for a variety of data analysis projects.
- CIS 30: Create professional workbooks for financial analysis, including formulas and function, charts, and macros.
- CIS 37: Create business correspondence using advanced word-processing techniques to produce clear, accurate, and professionally formatted documents.
- CIS 37: Integrate automation tools such as mail merge, form fields, tables, and macros to streamline document workflows and enhance productivity in a professional setting.
- CIS 39: Integrate advanced features such as mail merge, rules, and automation tools to improve efficiency and optimize communication workflows across multiple applications.
- CIS 39: Create and manage email, contacts, and folders using electronic communication and organizational tools for effective workplace communication.
- CIS 39: Use calendar, task, and automation features to schedule, coordinate, and manage appointments, meetings, and projects efficiently.

Employ interpersonal and critical thinking skills as well as problem solving.

- BUS 32: Demonstrate a level of engagement in the subject matter that reveals their understanding of the value of the course content beyond the task itself, specifically as it relates to linking the relevance of course content to careers in business and accounting and their personal lives.
- BUS 32: Write common business messages such as letters, memos, and e-mails that are clear, complete, concise, courteous, considerate, and correct.
- BUS 32: Compose a formal analytical business research report that is based on primary and secondary research and that is clear, complete, courteous, considerate and correct.
- BUS 32: Deliver a business presentation that is clear, complete, concise, considerate, and correct.
- BUS 62: Students will explain and apply effective human relations skills and related theories of motivation, communication and teamwork in solving problems that are typical of business organizations.
- BUS 62: Students will demonstrate the use of ethical business strategies for managing ethical dilemmas in the work place.
- BUS 62: Demonstrate a level of engagement in the subject matter that reveals their understanding of the value of the course content beyond the task itself, specifically as it relates to linking the relevance of course content to careers in business and accounting and their personal lives.
- CIS 30: Create, sort, and query a worksheet database for a variety of data analysis projects.
- CIS 30: Create professional workbooks for financial analysis, including formulas and function, charts, and macros.
- CIS 37: Create business correspondence using advanced word-processing techniques to produce clear, accurate, and professionally formatted documents.
- CIS 37: Integrate automation tools such as mail merge, form fields, tables, and macros to streamline document workflows and enhance productivity in a professional setting.
- CIS 39: Integrate advanced features such as mail merge, rules, and automation tools to improve efficiency and optimize communication workflows across multiple applications.
- CIS 39: Create and manage email, contacts, and folders using electronic communication and organizational tools for effective workplace communication.
- CIS 39: Use calendar, task, and automation features to schedule, coordinate, and manage appointments, meetings, and projects efficiently.

Required courses: (21 units)	**Units: 21.0**
BUS 32[DE] Business Communications	3.0
BUS 62[DE] Human Relations and Ethical Issues in Business	3.0
CIS 1[DE] Introduction to Computer Information Systems	3.0
CIS 30[DE] Microsoft Excel	3.0
CIS 37[DE] Microsoft Word	3.0
CIS 39[DE] MS Outlook - Comprehensive Course	3.0
OFTECH 1[DE] Keyboarding I	3.0
	Total: 21.0

Santa Monica College
Program of Study
Geography AA-T

The Associate in Arts in Geography for Transfer (AA-T) involves the understanding of the environment around us and interpretation of the patterns found across the Earth's surface. The course of study allows flexibility in course selection while providing a solid background in human, physical and regional aspects of the discipline. The degree includes GIS, focusing on the use of geocomputation and digital technology to assess spatial and environmental problems and provide solutions. Throughout the degree students will acquire and develop knowledge and skills that will equip them to be informed, engaged and productive global citizens, capable of leading humanity toward a more sustainable and adaptable future. The Associate in Arts in Geography for Transfer degree is designed to prepare students for transfer into the CSU system to complete a baccalaureate degree in Geography or a similar major. Upon completion of this degree, students will have a strong academic foundation in the field and be prepared for upper division baccalaureate study. Students who have completed the Associate in Arts for Transfer in Geography will have satisfied the lower division requirements for transfer into Geography or similar major for many campuses in the California State University system. This degree complies with the Student Transfer Achievement Reform Act (California Education Code 66746).

Program Learning Outcomes:

Demonstrate cartographic literacy, including map interpretation.

- GEOG 11: Identify and locate major cultural and environmental features on regional- and global-scale maps.
- GEOG 11: Evaluate the rationale behind and limitations of various schemes for regionalizing our understanding of the world – for defining and applying concepts such as Eastern Europe, Latin America, Africa, and South Asia when interpreting contemporary issues and events.
- GEOG 14: Students will be able to make connections between the places and events that define California so that they can identify issues and apply this knowledge to solve problems.
- GEOG 2: Students will understand core concepts in human geography and apply them within a variety of contexts, at scales ranging from the local to the global.
- GEOG 20: Students will interpret different types of spatial data and maps in terms of their scale, projection, and coordinate systems.
- GEOG 20: Students will implement a GIS mapping project using basic geoprocessing functions and spatial analysis tools, and various mapping techniques.
- GEOG 24: Produce a thematic map using cartographic principles of design, including appropriate symbolization and generalization
- GEOG 24: Students will access, interpret and use maps from a variety of print and electronic media.
- GEOG 8: Students will compile and analyze a variety of demographic and socio-economic data, in combination with visual and textual sources, to describe and evaluate specific urban settings and situations.
- GIS 20: Students will interpret different types of spatial data and maps in terms of their scale, projection, and coordinate systems.
- GIS 20: Students will implement a GIS mapping project using basic geoprocessing functions and spatial analysis tools, and various mapping techniques.
- GLOBAL 11: Identify and locate major cultural and environmental features on regional- and global-scale maps.
- GLOBAL 11: Evaluate the rationale behind and limitations of various schemes for regionalizing our understanding of the world – for defining and applying concepts such as Eastern Europe, Latin America, Africa, and South Asia when interpreting contemporary issues and events.
- URBAN 8: Students will compile and analyze a variety of demographic and socio-economic data, in combination with visual and textual sources, to describe and evaluate specific urban settings and situations.

Recognize and evaluate spatial distributions on all scales from local to global to become better global citizens.

- GEOG 11: Identify and locate major cultural and environmental features on regional- and global-scale maps.
- GEOG 11: Recognize and apply core concepts in world geography and global studies within various world-regional contexts.
- GEOG 11: Evaluate the rationale behind and limitations of various schemes for regionalizing our understanding of the world – for defining and applying concepts such as Eastern Europe, Latin America, Africa, and South Asia when interpreting contemporary issues and events.
- GEOG 2: Students will understand core concepts in human geography and apply them within a variety of contexts, at scales ranging from the local to the global.
- GEOG 20: Students will interpret different types of spatial data and maps in terms of their scale, projection, and coordinate systems.
- GEOG 20: Students will differentiate between vector, raster, and object-oriented GIS data structures, and execute various methods of data acquisition from online geospatial data portals.

- GEOG 20: Students will implement a GIS mapping project using basic geoprocessing functions and spatial analysis tools, and various mapping techniques.
- GEOG 23: Students will execute various methods of data acquisition from online geospatial data portals.
- GEOG 23: Students will explain and execute various geoprocessing functions used in GIS analysis, such spatial queries, joining layers, and intersecting features.
- GEOG 23: Students will explain and execute various geospatial analysis methods, such as suitability analysis, hotshot analysis, spatial pattern analysis and terrain analysis.
- GEOG 8: Students will understand core concepts in urban geography, and urban studies more broadly, and apply them within a variety of local, national, and global contexts.
- GEOG 8: Students will apply historical-geographical and theoretical insight to discussions of present-day issues such as housing, transportation, urban development, gentrification, segregation, and policies to reform suburban sprawl.
- GIS 19: Student will be able to identify the online spatial data sources available for Business analysis.
- GIS 20: Students will interpret different types of spatial data and maps in terms of their scale, projection, and coordinate systems.
- GIS 20: Students will differentiate between vector, raster, and object-oriented GIS data structures, and execute various methods of data acquisition from online geospatial data portals.
- GIS 20: Students will implement a GIS mapping project using basic geoprocessing functions and spatial analysis tools, and various mapping techniques.
- GIS 23: Students will execute various methods of data acquisition from online geospatial data portals.
- GIS 23: Students will explain and execute various geoprocessing functions used in GIS analysis, such spatial queries, joining layers, and intersecting features.
- GIS 23: Students will explain and execute various geospatial analysis methods, such as suitability analysis, hotshot analysis, spatial pattern analysis and terrain analysis.
- GLOBAL 11: Identify and locate major cultural and environmental features on regional- and global-scale maps.
- GLOBAL 11: Recognize and apply core concepts in world geography and global studies within various world-regional contexts.
- GLOBAL 11: Evaluate the rationale behind and limitations of various schemes for regionalizing our understanding of the world – for defining and applying concepts such as Eastern Europe, Latin America, Africa, and South Asia when interpreting contemporary issues and events.
- URBAN 8: Students will understand core concepts in urban geography, and urban studies more broadly, and apply them within a variety of local, national, and global contexts.
- URBAN 8: Students will apply historical-geographical and theoretical insight to discussions of present-day issues such as housing, transportation, urban development, gentrification, segregation, and policies to reform suburban sprawl.

Identify spatial patterns and relationships between systems and cycles that affect life and shape landscapes.

- BOTANY 3: Given a setting in which an ecosystem is showing a loss of biodiversity diagnose potential causes of loss of diversity and recommend steps that could be taken to restore and protect diversity.
- GEOG 1: Students will identify the major concepts related to the four spheres of the natural environment: the atmosphere, lithosphere, hydrosphere, and biosphere.
- GEOG 1: Students will differentiate between interconnected cycles and systems that shape the four spheres of the natural environment.
- GEOG 14: Students will be able to evaluate California's diverse physical and human landscapes and understand the forces that are changing them.
- GEOG 2: Students will evaluate, from a geographic perspective, humanity’s continuing work to make and maintain our home on planet Earth—that is, to think about patterns and processes of human inhabitance, through periods of agricultural and industrial revolution, in terms of space, place, and the cultural landscape.
- GEOG 23: Students will explain and execute various geospatial analysis methods, such as suitability analysis, hotshot analysis, spatial pattern analysis and terrain analysis.
- GEOG 3: Students will recognize and differentiate between the cycles and systems of Earth that affect the atmosphere.
- GEOG 5: Students will identify the major concepts related to the four spheres of the natural environment: the atmosphere, lithosphere, hydrosphere, and biosphere.
- GEOG 5: Students will differentiate between interconnected cycles and systems that shape the four spheres of the natural environment.
- GEOG 5: Students will identify the processes and forces that are changing the four spheres of the natural environment.
- GEOL 4: Demonstrate a conceptual understanding of fundamental geologic concepts, principles, and interactions of Earth's systems.

- GIS 23: Students will explain and execute various geospatial analysis methods, such as suitability analysis, hotshot analysis, spatial pattern analysis and terrain analysis.

Required Core Courses: 6 units minimum	**Units: 6.0**
GEOG 1[DE] Physical Geography	3.0
OR	
GEOG 5[DE] Physical Geography with Lab	4.0

GEOG 2[DE] Introduction To Human Geography	3.0

Area A: Select 6 units from the following:	**Units: 6.0**
GEOG 3 Weather and Climate	3.0
GEOG 11[DE] World Geography: Introduction to Global Studies *Same as: GLOBAL 11*	3.0
GEOG 14[DE] Geography of California	3.0
GEOG 20[DE] Introduction to Geographic Information Systems *Same as: GIS 20*	3.0
GIS 20[DE] Introduction to Geographic Information Systems *Same as: GEOG 20*	3.0
GLOBAL 11[DE] World Geography: Introduction to Global Studies *Same as: GEOG 11*	3.0

Area B: Select 6 units from the following:	**Units: 6.0**
Any course(s) not used in Area A	

ANTHRO 1[DE] Biological Anthropology	3.0
OR	
ANTHRO 5[DE] Biological Anthropology with Lab	4.0

ANTHRO 2[DE] Cultural Anthropology	3.0
ANTHRO 3[DE] World Archaeology	3.0
BIOL 3 Fundamentals of Biology	4.0

BOTANY 1[DE] General Botany	4.0
OR	
BOTANY 3 Field Botany	4.0

CHEM 11[DE] General Chemistry I	5.0
CS 20B[DE] Data Structures with Java	3.0
CS 55[DE] Java Programming	3.0
ENGL C1001[DE] Critical Thinking and Writing (formerly ENGL 2)	3.0

ENGL 31[DE] Advanced Composition	3.0
OR	
HIST 47 The Practice of History	3.0

ENVRN 7[DE] Introduction to Environmental Studies *Same as: GEOG 7*	3.0
GEOG 7[DE] Introduction to Environmental Studies *Same as: ENVRN 7*	3.0
GEOG 8[DE] Introduction to Urban Studies *Same as: URBAN 8*	3.0
GEOG 10 Living in a Hazardous Environment	3.0
GEOG 23[DE] Intermediate Geographic Information Systems *Same as: GIS 23*	3.0
GEOG 24 Geospatial Imagery: Maps for the Twenty-First Century	3.0

GEOL 1[DE] Physical Geology without Lab	3.0
OR	
GEOL 4[DE] Physical Geology with Lab	4.0

GIS 19 Geographic Information Systems for Business	3.0
GIS 23[DE] Intermediate Geographic Information Systems *Same as: GEOG 23*	3.0
URBAN 8[DE] Introduction to Urban Studies *Same as: GEOG 8*	3.0
MATH 2[DE] Precalculus	5.0
MATH 7[DE] Calculus 1	5.0
MATH 8[DE] Calculus 2	5.0
PHYSCS 8 Calculus-based General Physics 1 with Lab	4.0
STAT C1000[DE] Introduction to Statistics (formerly MATH 54)	4.0
	Total: 18.0

Substantial Change: ANTHROPOLOGY 10, Forensic Anthropology

Units:	3.00
Total Instructional Hours (usually 18 per unit):	54.00
Hours per week (full semester equivalent) in Lecture:	3.00
In-Class Lab:	0.00
Arranged:	0.00
Outside-of-Class Hours:	108.00
Transferability:	Transfers to UC, CSU
Cal-GETC Area:	5B: Biological Science (pending review)
SMC GE Area:	5: Natural Sciences
Degree Applicability:	Credit - Degree Applicable

Rationale
Review, revise and update course content and resubmit for Cal-GETC 5B approval.

I. **Catalog Description**
In this course, students examine the scientific principles and applied methodologies of forensic anthropology. Emphasis is placed on the examination and interpretation of human skeletal remains to determine biological information, assess evidence of trauma and disease, and contribute to the identification of individuals. Students are introduced to current techniques used in the analysis of human skeletal remains, medicolegal procedures, and the role of the forensic anthropologist in the investigative process.

II. **Examples of Appropriate Text or Other Required Reading:**
(include all publication dates; for transferable courses at least one text should have been published within the last 7 years)
1. Introduction to Forensic Anthropology., 6, Byers, S. N., Routledge © 2023, ISBN: 9781032255590
2. Forensic Anthropology: A Comprehensive Introduction., Murphy, Grace (ed.), Murphy & Moore Publishing © 2022, ISBN: 9781639872350
3. Forensic Anthropology: Current Methods and Practice, 2nd, Christensen, A., N. Passalacqua, and E. Batelink, Academic Press © 2019, ISBN: Hardback ISBN: 9780128157343; eBook ISBN: 9780128157350

III. **Course Objectives**
Upon completion of this course, the student will be able to:
1. Describe the history of forensic anthropology and its relationship to biological anthropology.
2. Explain the fundamentals of human skeletal biology: bone cell biology, basic osteology, odontology, and skeletal anatomy.
3. Apply metric and non-metric techniques to establish the biological profile of skeletal remains, including age, sex, ancestry, and stature.
4. Apply techniques used to determine trauma and pathology in skeletal remains.
5. Identify taphonomic and postmortem changes to human remains to aid in differentiating surface from burial depositions, and archaeological from contemporary burials.
6. Assess the forensic context and describe the recovery methods of a crime scene.
7. Explain the varying roles of the forensic anthropologist in criminal investigations, human rights cases, and mass fatality investigations.
8. Analyze the legal and ethical issues of working with human remains.

IV. **Methods of Presentation:**
Lecture and Discussion, Online instructor-provided resources, Observation and Demonstration, Discussion, Projects, Experiments, Visiting Lecturers, Other Methods: Slide presentations, videos, websites and internet resources.

V. **Course Content**

% of Course	Topic
10.000%	Introduction to forensic anthropology - History of forensic anthropology - Forensic anthropology as an applied science within Biological Anthropology

	- Medicolegal contexts and issues
15.000%	Human skeletal biology - Human osteology and odontology - Bone growth and development - Bone anatomy and identification
7.000%	Lab procedures and the examination of human skeletal remains - Science lab protocols and methods - Working with human remains - Osteological and osteometric methods - Bioethics
10.000%	Biological profile and sex estimation - Reconstruction of the biological profile - Discussion of gender, sex, and osteological sex - Sexual dimorphism - Emphasis on osteological sex indicators from the os coxa and skull
10.000%	Age at death estimation - Distinction between chronological and biological age - Osteological markers of biological age estimation
10.000%	Estimation of ancestry - Distinction between race and ancestry - Skeletal indicators of ancestry - Caveats and limitations of methods
8.000%	Skeletal anomalies and pathologies - Individual and population variation - Unique features in the context of personal identification - Identification and interpretation of skeletal pathology
8.000%	Cause and manner of death, and analysis of skeletal trauma - Distinction between cause and manner of death - Role of the coroner and medical examiner within the medicolegal sphere - Role of the forensic anthropologist in determining cause and manner of death - Identifying categories of skeletal trauma
7.000%	Establishing forensic context, postmortem interval, and taphonomy - Applying archaeological methods to the recovery of crime scenes - Ascertaining context and association at a potential crime scene - How context and association inform the postmortem interval
8.000%	Recovery of skeletal remains at the crime scene - Methods applied to the recovery of a crime scene - Using archaeological methods to map and recover skeletal remains - Preserving the integrity of a crime scene
7.000%	Forensic anthropology in real-world examples - Mass fatalities - Natural disaster recoveries - Human rights investigations
100.000%	Total

VI. **Methods of Evaluation**

% of Course	**Topic**
35%	Exams/Tests: 3–4 exams.

15%	Quizzes: Reading and lecture quizzes.
15%	Group Projects
15%	Written assignments
20%	Class Work
100%	Total

VII. **Sample Assignments:**

Determining forensic significance: Human or non-human bone? The techniques used to distinguish human from non-human bone have been presented in lecture, and I have reviewed the various classroom resources (comparative skeletal materials, data tables, anatomical atlases, etc.) that are available to assist in this diagnosis. In this exercise you will apply your knowledge to solving the problem of species identification. You will work in teams of two. Each team will receive a numbered evidence bag containing a set of 5 bones. All bags contain a combination of complete and fragmentary elements, and all contain some combination of human and/or animal bone. While all specimens come from our osteological collection, you are to assume that each bag contains materials discovered, collected, and turned in to local police by hikers. As a forensic anthropologist, you have been asked to submit a report identifying these bones as human or non-human. Collect the following data for each of your 5 bone specimens. Note: the specific type of age and size data you collect will vary, depending on each specimen's completeness and element identification. 1) Completeness: Assess whether the specimen represents a complete or fragmentary element. 2) Age characteristics: Identify whether the specimen is skeletally mature or immature. List the criteria you were able to apply to this assessment, e.g. epiphyseal union, dental development, etc. 3) Element identification: The level to which you can identify your specimen may vary, depending on the specimen's completeness. Be as specific as possible. Sketch the specimen by laying it on a piece of graph paper and then drawing it on the Data Collection graph. Note the morphological characteristics that assisted your identification. 4) Bone size: Collect the appropriate standard measurement data for this specimen. Draw lines on the specimen sketch to indicate each measurement; record the measurement and its value (in mm). 5) Conclusion: Assess the species status of the specimen. Describe the combination of morphological data, element identification assessment, and age and size data on which this determination is based. If the specimen is non-human try to determine which taxonomic category it represents.

Forensic recovery of human remains: The subject of this exercise is the recovery of human remains. Read and discuss the following scenario with your group. An investigator arrives at a murder scene. He can see the body lying in the middle of a field some 50 feet from where he is standing behind the police tape. Without consulting with any of the personnel already on the scene, he walks straight over to the body and turns it over to see if he can find a bullet. He finds the bullet underneath the body and bags it as evidence. He puts on latex gloves and inspects the body more closely. He notices that the hands have been tied, so he undoes the knot and places the rope in the evidence bag alongside the bullet. He notices that the t-shirt of the decedent is blood-stained, so he lifts up the shirt and finds a bullet wound to the abdomen. Using a water bottle, he washes off the blood from around the wound so that he can get a nice photo of it. He discards his gloves and pulls out his phone to take a few photos of the wound. In your group, discuss the many failings of this investigator. Aim to find at least eight CSI protocol violations. What would have been the correct procedure? After you have discussed this with your group, use the space below to record what you discussed. Once you have finished your group discussion call over your professor, so that you can share your thoughts.

VIII. **Student Learning Outcomes:**

1. Describe the role, responsibilities, and contributions of the forensic anthropologist in a medicolegal context.
2. Apply forensic and anthropological methods to reconstruct an individual’s biological profile based on their skeletal remains.
3. Identify and interpret skeletal changes resulting from cause and manner of death, postmortem alterations, and other taphonomic processes.

Substantial Change:
BIOLOGY 30, Fundamentals of Biotechnology 1

Units:	5.00
Total Instructional Hours (usually 18 per unit):	126.00
Hours per week (full semester equivalent) in Lecture:	4.00
In-Class Lab:	3.00
Arranged:	0.00
Outside-of-Class Hours:	144.00
Transferability:	Transfers to CSU
SMC GE Area:	5: Natural Sciences
Degree Applicability:	Credit – Degree Applicable

I. **Catalog Description**

This course introduces the biotechnology industry and foundational concepts in molecular and cellular biology, microbiology, and biomanufacturing. Students develop basic laboratory skills, including measurement, solution preparation, documentation, and data analysis, with an emphasis on Good Laboratory Practices (GLP), safety, and quality practices. The course prepares students for further study in biotechnology and entry-level bioscience roles and explores applications in medical, agricultural, environmental, and industrial settings.

II. **Examples of Appropriate Text or Other Required Reading:**

(include all publication dates; for transferable courses at least one text should have been published within the last 7 years)

1. Introduction to Biotechnology, 4th, Thieman, William J, Pearson © 2019
2. Biotechnology Foundations, 2nd, O'Grady, J., OpenStax (OER) © 2020
3. Calculations for Molecular Biology and Biotechnology, 3rd, Frank H. Stephenson, Academic Press © 2016, ISBN: 9780128025987
4. Basic and Applied Aspects of Biotechnology, Varsha Gupta;Manjistha Sengupta;Jaya Prakash;Baishnab Charan Tripathy, Springer India © 2017, ISBN: 9789811008757
5. Scientific Writing 3.0: A Reader and Writer's Guide, 3rd, Jean-Luc Lebrun; Justin Lebrun, World Scientific Publishing © 2022, ISBN: 9789811228834
6. Khalid Z. Masoodi; Sameena Maqbool Lone; Rovidha Saba Rasool. Advanced Methods in Molecular Biology and Biotechnology: A Practical Lab Manua, Academic Press

III. **Course Objectives**

Upon completion of this course, the student will be able to:

1. Apply the scientific method to design, conduct, and document basic biotechnology laboratory experiments.
2. Demonstrate proficiency in laboratory techniques, including pipetting, measurement, microscopy, and solution preparation.
3. Properly operate laboratory equipment and introductory instrumentation to carry out biotechnology-related procedures safely and accurately.
4. Record and organize experimental data using laboratory notebooks, tables, and graphs following industry-style documentation practices.
5. Follow and implement standard operating procedures (SOPs) and laboratory safety protocols, including appropriate use of PPE.
6. Identify and troubleshoot common experimental errors using basic root cause analysis strategies.

IV. **Methods of Presentation:**

Lecture and Discussion, Lab, Observation and Demonstration, Discussion, Projects, Experiments, Field Trips, Visiting Lecturers, Group Work, Other Methods: The primary means of instruction are lecture presentation and laboratory experience. Digital media are used in moderation to present materials, which may be more adequately treated by these methods. Slides, computer presentations, and other web-based instructional technologies may be used to illustrate the lectures and to clarify laboratory exercises. Demonstrations, models, and microorganisms are used when available and appropriate. Students are provided with a variety of extracurricular activities, which may be assigned, optional, or extra credit. These include industry tours, web/internet searches, and exercises in quality control and regulation. Hands-on activities are stressed in the laboratories. Many exercises are designed to provide experience with scientific methodology and soft-skills development, in addition to teaching the biotechnology concepts involved. Discussions and a cooperative learning environment are required in the laboratory.

V. **Course Content**

% of Course	Topic
5.000%	Biotechnology history, industry sectors, workforce pathways, and company structure
10.000%	Biomanufacturing workflow, upstream/downstream overview, and production roles
10.000%	Scientific method, experimental controls, ethics, and scientific reasoning
12.000%	Chemistry fundamentals for biotechnology: units, solutions, pH, biomolecules
9.000%	Prokaryotic and eukaryotic cell structure and function
9.000%	Membrane transport, signaling, and cellular energetics
9.000%	Cellular respiration, fermentation, and photosynthesis in biotech applications
7.000%	Cell cycle, mitosis, meiosis, heredity, and cancer biology
6.000%	DNA structure, replication, gene expression, and introductory genetics
4.000%	Biotechnology applications in health, agriculture, environment, and industry
15.000%	Introductory quality systems, documentation, safety culture, and regulation
4.000%	Professional communication, data interpretation, and career preparation
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
10%	Class Participation: In-class activities
20%	Exams/Tests
10%	Quizzes
10%	Written assignments
10%	Other: Lab Notebook Evaluation
10%	Homework
10%	Lab Reports: Lab Summary/ Data Analysis Assignments
5%	Oral Presentation
10%	Final exam
5%	Other Assessments: Laboratory Practicum/ Skills Demonstration
100%	Total

VII. **Sample Assignments:**

Biomanufacturing Process Map: Create a process map that follows a biotechnology product from raw material receipt through final product release. Your process map should show the major stages of the biomanufacturing workflow and identify where quality assurance and quality control activities occur. For each major stage, include: 1. The main activity or process step. 2. The technician or department responsible. 3. Required documentation,

such as SOPs, batch records, or laboratory records. 4. At least one safety or quality checkpoint. 5. A brief explanation of why that checkpoint is important. After completing your process map, write a short summary explaining how documentation, safety, and quality practices help ensure that the final product is produced consistently and meets required standards. Submit your process map and written summary as instructed by your instructor.

Pipetting Exercise: Demonstrate proper micropipetting technique by selecting the appropriate micropipette for specified volumes and accurately transferring liquid samples. Using the volumes provided by your instructor, select the appropriate P-10, P-20, P-200, or P-1000 micropipette for each transfer. Before beginning, verify that each selected volume falls within the operating range of the micropipette. Complete the assigned liquid transfers and record the expected and measured values in your laboratory notebook. Calculate the percent error for your results and evaluate the accuracy of your pipetting technique. Your submission must include: 1. The micropipette selected for each assigned volume. 2. Recorded expected and measured values. 3. Percent-error calculations. 4. A brief analysis explaining whether your results demonstrate acceptable accuracy and identifying at least two possible sources of error. 5. A brief explanation of how you would improve your technique if the experiment were repeated. Submit your completed work as instructed by your instructor.

Laboratory Notebook Audit and Revision: Review a provided sample laboratory notebook entry and evaluate it for compliance with laboratory documentation expectations. Identify errors or missing information, including missing dates, unclear or incomplete procedures, unlabeled data, improper corrections, and incomplete conclusions. After completing your review, revise the notebook entry so that it follows proper industry-style documentation practices. Your submission must include: 1. The original notebook entry with the documentation issues clearly identified. 2. A corrected version of the notebook entry using proper laboratory documentation practices. 3. A brief explanation of at least three corrections you made and why each correction was necessary. Submit the completed assignment through Canvas as a single PDF.

VIII. **Student Learning Outcomes:**

1. Analyze biotechnology company structures and biomanufacturing workflows, including workforce roles and production processes.
2. Analyze and interpret scientific data using laboratory notebooks, tables, and graphical representations.
3. Properly implement Good Laboratory Practices (GLP) and standard laboratory safety procedures in laboratory settings.
4. Demonstrate proficiency in core laboratory practices, including safety, PPE, notebook documentation, measurements, solution preparation, microscopy, pipetting, and quantitative data collection.
5. Apply foundational concepts in molecular and cellular biology, microbiology, and biotechnology to biotechnology applications and workflows.

Substantial Change:
BIOLOGY 31, Fundamentals of Biotechnology 2: From Genes to Proteins

Units:	5.00
Total Instructional Hours (usually 18 per unit):	162.00
Hours per week (full semester equivalent) in Lecture:	3.00
In-Class Lab:	6.00
Arranged:	0.00
Outside-of-Class Hours:	108.00
Transferability:	Transfers to CSU
SMC GE Area:	5: Natural Sciences
Degree Applicability:	Credit – Degree Applicable
Prerequisite(s):	BIOL 30

I. **Catalog Description**

This course advances foundational biotechnology concepts through the application of molecular biology and protein analysis techniques in laboratory settings. Students conduct biotechnology experiments using multi-step protocols, including DNA amplification, recombinant DNA methods, and protein analysis. Emphasis is placed on standard operating procedures, Good Laboratory Practices (GLP), and quality systems in laboratory workflows. Students analyze experimental data, troubleshoot procedures, and produce industry-standard laboratory documentation. The course prepares students for internships, industry certification, and entry-level laboratory roles.

II. **Examples of Appropriate Text or Other Required Reading:**

(include all publication dates; for transferable courses at least one text should have been published within the last 7 years)

1. Biotechnology: A Laboratory Skills Course, 2nd, Brown, J.K., Bio-Rad Laboratories, Inc © 2018
2. Basic Laboratory Calculations for Biotechnology, 2, Lisa Seidman, CRC Press © 2021
3. Basic Laboratory Methods for Biotechnology, 3, Lisa Seidman, CRC Press © 2022
4. Scientific Writing 3.0: A Reader and Writer's Guide, 3rd, Jean-Luc Lebrun; Justin Lebrun, World Scientific Publishing © 2022, ISBN: 9789811228834
5. Basic and Applied Aspects of Biotechnology, 1st, Varsha Gupta; Manjistha Sengupta; Jaya Prakash; Baishnab Charan Tripathy, Springer India © 2017, ISBN: 9789811008733
6. Calculations for Molecular Biology and Biotechnology, 3rd, Frank H. Stephenson, Academic Press © 2016, ISBN: 9780128025987
7. Carson, S., et al. Molecular Biology Techniques: A Classroom Laboratory Manual, Academic Press
8. Khalid Z. Masoodi; Sameena Maqbool Lone; Rovidha Saba Rasool. Advanced Methods in Molecular Biology and Biotechnology: A Practical Lab Manual, Academic Press

III. **Course Objectives**

Upon completion of this course, the student will be able to:

1. Demonstrate proficiency in following, evaluating, and revising standard operating procedures (SOPs) and applying quality control and quality assurance principles within laboratory workflows.
2. Maintain accurate and complete industry-standard laboratory documentation in real time, including laboratory notebooks and data records.
3. Prepare, sterilize, and handle laboratory reagents and biological materials using appropriate techniques.
4. Operate and maintain core biotechnology equipment, including water baths, autoclaves, centrifuges, and spectrophotometers.
5. Design and troubleshoot experiments using the scientific method and CAPA frameworks and communicate scientific findings effectively in written and oral formats.
6. Assess career pathways and demonstrate readiness for biotechnology employment and certification.

IV. **Methods of Presentation:**

Lecture and Discussion, Lab, Observation and Demonstration, Field Trips, Projects, Visiting Lecturers
Other Methods: The primary means of instruction are lecture presentation, technical hands-on instruction, and laboratory experience. Digital media are used in moderation to present materials, which may be more adequately treated by these methods. Slides, computer presentations, and other web-based instructional technologies may be used to illustrate the lectures and to clarify laboratory exercises. Demonstrations and microorganisms are used when available and appropriate. Students are provided with a variety of extracurricular activities, which may be assigned, optional, or extra credit. These include industry tours, web/internet searches, and exercises in

quality control and regulation. Hands-on activities are stressed in the laboratories. Many exercises are designed to provide experience with scientific methodology and soft-skills development, in addition to teaching the biotechnology concepts involved. Discussions and a cooperative learning environment are required in the laboratory.

V. **Course Content**

% of Course	Topic
8.000%	Biotechnology Industry & Workforce • Roles, career pathways, and regulatory landscape (FDA, OSHA, EPA) • Introduction to quality systems (GLP, GMP, ISO)
17.000%	Laboratory Safety & Quality Systems • PPE, SDS, hazard vs risk, ISM framework • SOP structure, deviation reporting, documentation practices o ISO
12.000%	Core Molecular Biology Concepts • DNA structure, replication, gene expression • Prokaryotic vs eukaryotic systems
8.000%	Bioinformatics • Sequence analysis, database usage, primer design
14.000%	DNA Technology & Gene Cloning • PCR, restriction digest, gel electrophoresis • Plasmid design and ligation
12.000%	Microbiology & Cell Culture • Aseptic technique, transformation, selection
10.000%	Protein Expression & Purification • Expression systems • Chromatography and separation techniques
8.000%	Protein Analysis • Quantification assays (Bradford, BCA) • SDS-PAGE and interpretation
8.000%	Experimental Design & Troubleshooting • Controls, variables, error analysis • CAPA methodology
3.000%	Professional & Career Skills • Resume, LinkedIn, interview prep • Scientific communication
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
10%	Class Participation: Lab conduct, teamwork, preparedness
25%	Exams/Tests: Concepts, calculations, troubleshooting scenarios
15%	Simulation: Laboratory Practicum - Hands-on demonstration of technical skills
15%	Other: Assessed for accuracy, completeness, and compliance with industry standards

15%	Lab Reports: Lab Reports / Data Analysis Interpretation, calculations, and scientific reasoning
10%	Quizzes: Bi-weekly concept + technique checks
5%	Homework
5%	Final Project: Experimental design or data presentation
100%	Total

VII. **Sample Assignments:**

Discussion Board Entry: Throughout the semester we have discussed the importance of ethical conduct in research and most recently we applied this discussion to the usage of gene editing tools. Through this discussion, you have learned how CRISPR and adeno- and lentivirus vectors function and how they have revolutionized the way in which modern medicine can treat or manage genetic diseases; however, despite the good that can be performed by using these cutting-edge methods, there are still ethical and social concerns regarding their widespread usage. For this discussion board entry, you will read the article "An Indigenous bioethicist on CRISPR and decolonizing DNA (Links to an external site.)" and then answer the following questions in your own words. This assignment is worth 10 points. 1. Summarize the mechanism of action of the CRISPR-Cas9 gene editing system and explain why this tool might raise concerns about ethics? 2. Based on what you read, what does geneticist-bioethicist, Krystal Tsosie, mean by "Decolonizing DNA" and what example does she provide to explain this concept? 3. How does cultural consistency fit in with the conversation about ethical genomics and why would this be an important concept for a biotechnology company to consider?

Preparing Bacterial Cells for Protein Purification: Now that you have successfully transformed your chemically competent E. coli with the GFP recombinant plasmid and cultured the bacteria in conditions that will induced protein production, you are now ready to lyse your E. coli cells (Part I) and purify the protein (Part II). Before beginning this lab, review your safety SOP for working with bacteria. Part I: Lysing Bacteria for Protein Purification 1. Take a long wave UV light and look at the EC tube, record your observations. 2. Weigh your EC tube. Look for another tube with a similar weight; +/- 0.1g or create a balance tube for the microcentrifuge. 3. Spin the EC tube for 5 minutes at 13,000 rpm (or as high speed as possible) in a microcentrifuge. Make sure to balance the tubes correctly. 4. Very carefully take out the EC tube from the microcentrifuge. Avoid disturbing the cell pellet at the bottom of the tube. 5. Take the P-200 micropipette, set it to 200.0 µL and get a tip. Press to the first stop before going into the supernatant (liquid layer) and gently pull out the old liquid growth media. Do not disturb the cell pellet when doing so. 6. Discard the liquid into the liquid waste container, and the tip in sharps container. 7. Bring your cell pellet (the EC tube) to your instructor to dispense 1 ml of the same culture into your tube. 8. Repeat steps 2-6, so spin down the cells for 5 min again and remove the supernatant. Record the color of the supernatant and pellet at this step. 9. Take the P-200 micropipette and a new tip and carefully try to fully remove all the liquid from the pellet without taking up the cells. Discard the tip in sharps. 10. Set the P-200 to 150.0 µL and get a new tip. Add 150 µL of elution buffer (EB) to the EC tube. Discard the tip. 11. Firmly close the EC tube and resuspend the cell pellet with a vortexer. If one is unavailable, drag the tube quickly across an empty microfuge tube rack. This should cause the cell pellet to dislodge from the bottom of the tube and the buffer should become turbid. Repeat this movement until the entire pellet is gone. 12. Take the P-200 and get a new tip. Add 150 µL of lysis buffer (LyB) to the EC tube. Mix the tube contents with a vortexer or the microfuge tube rack method like previously. 13. The EC tube will incubate in the lysis buffer overnight at room temperature. Label your tube with class period and group number and give to your instructor to do this step. 14. Clean your work area and discard all contaminated tubes and tips into the appropriate biohazardous waste. Ref: Sourced from ASCCC Open Educational Resources Initiative

VIII. **Student Learning Outcomes:**

1. Apply molecular biology and protein analysis techniques and protocols to perform biotechnology experiments.
2. Analyze and interpret experimental results to evaluate data quality, procedural errors, and experimental outcomes.
3. Implement standard operating procedures (SOPs) and quality systems, including Good Laboratory Practices (GLP), in biotechnology workflows.
4. Produce and maintain industry-standard laboratory documentation, including laboratory notebooks, data records, and technical reports.

☑ Online/Classroom Hybrid (not a delivery option when campus is closed)

1a. Instructor - Student Interaction:
Instructor-student interaction will occur multiple times per week through both remote and in-person modalities. Lecture will be delivered online in a remote format (synchronous and/or asynchronous) through recorded or live sessions. Interaction will occur through Canvas announcements, discussion boards, assignment feedback, and email. In-person lab sessions will include direct instruction, demonstrations, and real-time feedback. Weekly virtual office hours will be offered, with additional support available by appointment.

1b. Student - Student Interaction:
Students will interact regularly through collaborative in-person lab activities, including group experiments, troubleshooting, and data analysis. In the lecture component, students will engage in discussion boards, peer review, and group-based assignments. These interactions will occur weekly and support collaboration and communication.

1c. Student - Content Interaction:
Students will engage with course content multiple times per week through remote lecture materials (videos, readings, and assignments) and in-person lab activities. Lecture content will be delivered online, while lab content will be completed in person. Students will apply concepts through experiments, assignments, discussion board, data analysis, quizzes, and written lab reports, ensuring consistent engagement across both components.

1d. Distance Ed Interactions:

Online class activities that promote class interaction and engagement	Brief Description	% of Online Course Hours
Online Lecture	Students will engage with remote lecture content through recorded and/or live online sessions, including videos, readings, and instructional materials delivered via Canvas.	50.00%
Threaded Discussions	Students will participate in Canvas discussion boards to analyze concepts, troubleshoot experimental scenarios, and engage with peers through structured responses and feedback.	20.00%
Written assignments	Students will complete assignments such as problem-solving exercises, data analysis, and written responses to reinforce lecture concepts and prepare for in-person lab activities.	20.00%
Other (describe)	Quizzes, Students will complete short quizzes through Canvas to assess understanding of lecture material and reinforce key concepts prior to in-person lab activities.	10.00%

2. Organization of Content:
Course content will be organized into weekly modules in Canvas. Lecture content will be delivered remotely through recorded and/or live online sessions, including videos, readings, and assignments. In-person lab sessions will reinforce lecture concepts through hands-on experiments, demonstrations, and data analysis. Each module will include learning objectives, instructional materials, and assessments. Technologies used include Canvas, video conferencing tools (e.g., Zoom), and multimedia resources.

3. Assessments:

% of grade	Activity	Assessment Method
10.00%	Class Participation	Students will be evaluated on active participation during in-person laboratory sessions, including preparedness, teamwork, adherence to lab protocols, and engagement in discussions. Participation includes contributing to troubleshooting, explaining results, and collaborating effectively with peers.
5.00%	Homework	Students will complete homework assignments reinforcing lecture and laboratory concepts. Assignments may include problem-solving, calculations, and short written responses and will be submitted through Canvas.
15.00%	Lab Reports	Students will complete in-person laboratory experiments and submit lab reports either through Canvas or in person. Lab reports will be evaluated based on data collection, analysis, interpretation, and scientific reasoning. Students will also be assessed through participation in laboratory discussions, including explanation of results and troubleshooting. Instructor feedback will be provided in a timely manner.

10.00%	Quizzes	Students will complete quizzes through Canvas to assess understanding of concepts and techniques. Quizzes may include multiple-choice, short answer, and data interpretation questions and may be timed to ensure academic integrity.
25.00%	Exams/Tests	Students will complete exams assessing conceptual understanding, calculations, and troubleshooting scenarios. Exams may administered in person or through Canvas and may include multiple-choice, short answer, and problem-solving questions. These assessments evaluate comprehension and application of course content.
15.00%	Simulation / Lab Practicum	Students will complete hands-on laboratory practicum assessments demonstrating technical skills and proper use of equipment. Students will be evaluated on accuracy, technique, and ability to follow protocols and apply learned methods in a laboratory setting.
5.00%	Final Project	Students will complete a final project involving experimental design or data presentation. Students will demonstrate the ability to apply course concepts, analyze results, and communicate findings effectively.
15.00%	Other	Students will be assessed on assignments focused on accuracy, completeness, and compliance with industry standards. This may include evaluation of laboratory documentation, adherence to protocols, and quality of work consistent with biotechnology practices.

4. Instructor's Technical Qualifications:
The instructor will be proficient in using Canvas to manage course content, assignments, discussions, and grading. The instructor will deliver remote lecture content using video conferencing tools (e.g., Zoom) and recorded lectures. The instructor will have completed or be willing to complete distance education training. Technical support is available through the college.

5. Student Support Services:
Students will have access to support services including tutoring, counseling, library resources, financial aid, and technical support. Links to these services will be provided in Canvas. Students will also have access to online databases, research tools, and writing support services.

6. Accessibility Requirements:
The course will meet accessibility standards in compliance with Section 508. Instructional materials will include descriptive alternative text, structured content with headings, accessible documents, and captioned videos. Content will ensure appropriate contrast and readability. The course will support students with disabilities through accessible design and coordination with campus services.

7. Representative Online Lesson or Activity:
Students will complete a remote lecture module on PCR and gene expression. The lesson will include a recorded lecture, assigned readings, and a short instructional video. Students will participate in a Canvas discussion analyzing experimental outcomes and troubleshooting errors. A follow-up quiz will assess understanding prior to performing the in-person lab activity.

Substantial Change:
BIOLOGY 32, Cell Culture Methods & Techniques

Units:	4.00
Total Instructional Hours (usually 18 per unit):	108.00
Hours per week (full semester equivalent) in Lecture:	3.00
In-Class Lab:	3.00
Arranged:	0.00
Outside-of-Class Hours:	108.00
Transferability:	Transfers to UC, CSU
SMC GE Area:	5: Natural Sciences
Degree Applicability:	Credit – Degree Applicable
Prerequisite(s):	BIOL 30 or BIOL 21

I. **Catalog Description**

This course covers techniques used to culture, maintain, and analyze eukaryotic and mammalian cells in biotechnology applications. Students perform aseptic techniques, expand cell cultures, and carry out procedures including subculturing, cryopreservation, transfection, and cell-based assays. Emphasis is placed on maintaining sterile conditions, monitoring cell growth and viability, and using microscopy and quantitative methods to evaluate experimental outcomes. Students also design and complete a short-term cell culture project while developing technical skills in reproducibility, documentation, and controlled laboratory practices relevant to biotechnology and life sciences careers.

II. **Examples of Appropriate Text or Other Required Reading:**

(include all publication dates; for transferable courses at least one text should have been published within the last 7 years)

1. Culture of Animal Cells , 8, Amanda Capes-Davis and Ian Freshney , Wiley-Blackwell © 2021
2. Animal Cell Culture: Principles and Practice (OER) , Shalini Mani , Manisha Singh , Anil Kumar, Springer Nature Link © 2023
3. OER Textbook: SCIENTIFIC WRITING 3.0 A Reader and Writer's Guide, Jean-Luc Lebrun and Justin Lebrun, World Scientific Publishing Co. Pte. Ltd. © 2022
4. Calculations for Molecular Biology and Biotechnology, Frank H. Stephenson, Elsevier © 2016
5. Gibco. Gibco Cell Culture Basics Handbook, Thermo-Fisher
6. Primary and secondary journal articles

III. **Course Objectives**

Upon completion of this course, the student will be able to:

1. Demonstrate proficiency in mammalian cell culture by applying essential laboratory skills, using and maintaining equipment, managing laboratory records, and following appropriate safety practices, including PPE.
2. Interpret and prepare laboratory documentation, including SOPs, protocols, flowcharts, experimental schedules, and laboratory notebooks.
3. Execute mammalian cell culture techniques, including expansion, subculturing, maintenance, cryopreservation, and selection of appropriate culture vessels.
4. Characterize and analyze cultured cells using microscopy, staining, and quantitative methods to assess cell morphology, viability, growth, and behavior.
5. Apply and interpret experimental assays and molecular techniques to evaluate cell function, including proliferation, migration, and gene expression.
6. Design and complete a short-term research project, including experimental planning, data collection, analysis, and presentation of results.

IV. **Methods of Presentation:**

Lecture and Discussion, Lab, Observation and Demonstration, Discussion, Critique, Projects, Experiments, Group Work, Online instructor-provided resources, Visiting Lecturers, Other

Other Methods: The primary means of instruction are lecture presentation and laboratory experience. Digital media are used in moderation to present materials, which may be more adequately treated by these methods. Slides, computer presentations, and other web-based instructional technologies may be used to illustrate the lectures and to clarify laboratory exercises. Demonstrations, models, and microorganisms and eukaryotic cells are used when available and appropriate. Students are provided with a variety of extracurricular activities, which may be assigned, optional, or extra credit. These include industry tours, web/internet searches, and exercises in

quality control and regulation. Hands-on activities are stressed in the laboratories. Many exercises are designed to provide experience with scientific methodology and soft-skills development, in addition to teaching the biotechnology concepts involved. Discussions and a cooperative learning environment are required in the laboratory.

V. **Course Content**

% of Course	Topic
5.000%	**Introduction to Mammalian Cell Culture** • Origin and Purpose of Cultured Cells in Research • Modern Day/Industry Applications of Cell/Tissue Culture • Cell Culture Environment • Advantages & Limitations of Cell Culture • 2D and 3D/ organoids culturing techniques
5.000%	**Features and Properties of Cultured Cells & Assays to Monitor** • Adhesion • Metabolism • Cell Division • Cell Death
10.000%	**Cell culture laboratory requirements** • Laboratory layout to create sterility gradient for workplace/facility • Standard and supplemental cell culture equipment (e.g., class II biological safety cabinet, CO2 incubator, liquid nitrogen cryogenic storage system, vacuum pump, benchtop centrifuge, water bath,CO2 indicator instrument, inverted microscope, hemocytometer, micrometer, automated cell counter, refrigerator, -20oC and -80oC freezers) • Plasticware and consumables
10.000%	**Safety & Aseptic Technique** • Objectives of aseptic technique for cell culture • Principles and practices of aseptic technique • Maintaining aseptic environment • Sterile handling
10.000%	**Defined Media and Supplements, Preparation and Sterilization of Media** • Physiological and chemical properties of media to support growth and proliferation of culturedmammalian cells (e.g., pH, O2, CO2, buffering, temperature) • Proper growth conditions • Media formulation/composition, including use of antibiotics • Serum and serum-free media • Quality of reagents and materials
10.000%	**Cell Culture Vessels and Substrates** • Treatments and substrates for cell attachment and growth • Culture vessels - selection and proper use of tissue culture flasks, dishes, multi-well plates • Cell densities and cell yield, techniques for even cell distribution and growth • Surface areas, medium volumes, and average cell yields for various cell culture vessels
20.000%	**Subculture, propagation, and expansion of cells grown as a monolayer and/or in suspension** ▪ Routine maintenance (e.g., visual observations, morphological assessment, growth rate, estimation of percent confluency of culture, media replacement) ▪ Subculture - passage cells based on a “split ratio” or dilution, record and track in vitro age of the culture by passage number

	▪ Density limitation of cell proliferation (contact inhibition), loss of contact inhibition and cellular transformation ▪ Use of antibiotics in media ▪ Maintenance records ▪ Imaging - photomicrographs ▪ Quality control - integrity and identification of cell lines
10.000%	**Cryopreserving & Reviving Cells** ▪ Equipment ▪ Reagents ▪ Cryopreserving Process ▪ Thawing & Reviving Cells
5.000%	Reproducibilty • Good Practice • Validation and Characterization • QA
5.000%	**Culture of Specific Cell Types** • Primary Cells/Low Passage Cells • Culture of Stem Cells and Tumor Cells • In vitro models of differentiation
5.000%	**Microbial Contamination** • Common Microbes • Mycoplasma (bacteria) • Fungi • Viral • Sources of Contamination • Identifying Microbial Contamination • Managing, Containing, & Eliminating Contamination
5.000%	Scaling Up and Automation of Cell Culture
100.000%	Total

VI. **Methods of Evaluation**

% of Course	**Topic**
10%	Exams/Tests: 1 Midterm exam
10%	Quizzes
10%	Other: Lab Notebook Evaluation
10%	Homework: Assignments on Canvas
5%	Class Participation: In-class participation: attendance, contributing to discussions or sharing ideas
20%	Final Performance: Practical Exam (basic cell culture techniques: passaging, cryopreservation, thawing)
15%	Final exam: Written Multiple Choices and Free Answer Questions
20%	Group Projects: Poster Presentation
100%	Total

VII. **Sample Assignments:**

MTT Assay: Objective: The measurement of cell viability and growth is a valuable tool utilized in a wide variety of research areas. In this experiment, students will use the tetrazolium dye-based MTT metabolic assay to quantify the cytotoxic effect of two pharmaceutical drugs, on cell viability. Students will learn: ▪ the quantification of cell viability based on dose-dependent cytotoxicity of two anti-cancer drugs ▪ the mechanistic function of tetrazolium dyes and its relation to the MTT assay ▪ the differences in cell viability between drug-resistant and drug-sensitive cell lines Seeding: Cells will be plated at 10,000 cells per well in 100 µL of media 24 h prior to drug dosing experiment in a 96-well plate. Drug addition: 1. Prepare 7 concentrations of the cytotoxic drugs in growth medium using a serial dilution of 1:2 starting with the highest concentration of 100 µM for cisplatin and 30 µM for ZHE. Prepare the drug-containing media in the microcentrifuge tubes. Each concentration will be done in triplicates. See the diagram in Fig. 3.4 for clarification. 2. Remove the old medium from the cells. 3. Add the new media containing the drugs with the appropriate concentration using the micropipette. 4. Incubate the cells for 24 hours. MTT Assay: 1. Prepare a solution of 1 mg/mL MTT in 10% (v/v) 1X DPBS and 90% (v/v) growth media. 2. Remove the medium from all wells using the micropipettor. 3. Use the micropipettor to add 100 µL of 1 mg/mL MTT reagent to each of the wells. 4. Incubate the plate for one hour at 37oC. 5. Replace the MTT-containing medium with 200 µL of DMSO and pipette up and down to dissolve the formazan crystal formed by live cells. Be careful not to make bubbles. 6. Incubate the plate for five minutes. Spectrophotometry: 1. During incubation, turn on the spectrophotometer and warm the instrument for 5 minutes. 2. On the computer, open the plate reader software 3. Click setup. 4. Make sure the wavelength reads 570 nm. 5. Remove the plate from the incubator and place on the plate reader. 6. Remove the plate cover and click read. Data analysis: 1. Use the control wells (DMSO) for each drug as a reference. Create a column in Excel where you have percent cell viability. 2. Calculate the percentage of viable cells for each of the drug concentrations by dividing the average absorbance from each well by the respective control value (DMSO well). 3. Find the average percent viability for each drug concentration and the standard deviation. 4. Plot a graph of the percent cell viability (y-axis) against the concentration of cisplatin (x-axis) and repeat the same procedure for the ZHE samples (x-axis). Create a total of 2 plots (one for each drug). Include your error bars

Transient Transfection Assay & Analysis: Objective: In this experiment, a non-viral gene delivery vector containing a gene that will code for a eGFP tagged protein, will be used to study gene delivery to mammalian cells. The efficiency of the transfection will be evaluated using flow cytometry. Students will learn: • Non-viral gene delivery system • Quantification of eGFP expression via flow cytometry Non-Viral transfection: 1. Change the media in the 24-well plate to 300 µL serum-free media. Take care to pipette to the side of the wells when adding serum-free media so that you do not dislodge any of the adherent cells. 2. Add 100 µL of polymer / DNA polyplex directly into the media of each well of cells for transfection. Shake gently to uniformly distribute polyplex in culture plate. 3. Transfect for 4 hours. Then change the solution to serum-containing media and incubate until the next day. Data acquisition using flow cytometry: 1. Observe cells under fluorescence microscope to visualize eGFP transfection. 2. Use the flow cytometer to evaluate eGFP expression in cells transfected by PEI and PEG. 3. To prepare samples for flow cytometry analysis, collect cells after trypsinization. Resuspend cells in PBS prior to data acquisition.

VIII. **Student Learning Outcomes:**

1. Analyze experimental results from cell-based assays based on cell growth, viability, and behavior.
2. Perform mammalian cell culture techniques, including subculturing, cryopreservation, and cell-based assays.
3. Apply aseptic techniques and proper use of laboratory equipment to maintain a sterile environment and support controlled laboratory conditions for cell growth and handling.
4. Interpret and analyze mammalian cell culture data and document experimental procedures, observations, calculations, and results using laboratory notebooks and industry-standard documentation practices.

Prerequisite / Corequisite Checklist and Worksheet

(Enter Discipline and Course # here)

Biotechnology: BIOL 32

Prerequisite: BIOL21 Cell Biology and Evolution

Other prerequisites, corequisites, and advisories also required for this course:
(Please note that a separate sheet is required for each prerequisite, corequisite, or advisory)
BIOL30 Fundamentals of Biotechnology I

SECTION 1 - CONTENT REVIEW: If any criterion is not met, the prerequisite will be disallowed.

Criterion	Met	Not Met
1. Faculty with appropriate expertise have been involved in the determination of the prerequisite, corequisite or advisory.	✓	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.	✓	
3. Selection of this prerequisite, corequisite or advisory is based on tests, the type and number of examinations, and grading criteria.	✓	
4. Selection of this prerequisite, corequisite or advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.	✓	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	✓	
6. The course materials presented in this prerequisite or corequisite have been reviewed and determined to teach knowledge or skills needed for success in the course requiring this prerequisite.	✓	
7. The body of knowledge and/or skills necessary for success in the course have been matched with the knowledge and skills developed by the prerequisite, corequisite or advisory.	✓	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	✓	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.	✓	

SECTION II - ADDITIONAL LEVEL OF SCRUTINY:

In addition to the affirmation of content review listed in section I, an additional level of scrutiny is also required. The level of scrutiny depends on which type of prerequisite is involved. There are six types and each is listed below. Please identify which one is being used to justify the proposed prerequisite. The additional level of scrutiny corresponding to each type of prerequisite is identified below.

Type 1: Standard Prerequisite (required prerequisite at UC or CSU)

___ Identify three UC or CSU campuses that offer the equivalent course with the equivalent prerequisite.

List schools here:

Complete the Prerequisite Worksheet

___ Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)

Complete the Prerequisite Worksheet

___ Type 3: Course in communication or computational skills as prerequisite for course other than another skills course (e.g., English 1 prerequisite for Anatomy 1)

Complete the Prerequisite Worksheet

Complete Data Analysis

✓ Type 4: Program prerequisites

Prerequisite must be required for at least one of the courses in the program. Explain: This course will provide the necessary foundation pertaining to the parts of the cell,

___ Type 5: Health and Safety

Students who lack the prerequisite might endanger themselves, other students or staff. Explain:

___ Type 6: Recency and other measures of readiness (miscellaneous)

Data must be collected according to sound research principles in order to justify such prerequisites.

Complete the Prerequisite Worksheet

Prerequisites using Content Review

In order to properly justify/substantiate any prerequisite, we need to first determine what skills are necessary for students to be successful (skills without which they will likely not succeed (i.e., pass the course)).

- Keep in mind that "success" in the course means "passing" the course. "Success" does not mean "more likely to get a B or higher".

Once we've identified what are the "entrance skills" necessary for success, we then need to look at the "exit skills" (objectives) of our existing courses to determine which of our courses sufficiently prepares students (based on the entrance skills) to be successful in the course in question.

- It is highly unlikely that there will be a "1-to-1 relationship" between the entrance skills and exits skills.
    - Course A, for example, may have 10 objectives, but perhaps only 5 (or even just 1) are essential for success in Course B. Only the relevant exit skills should be used to justify/substantiate a prerequisite.

Completing the prerequisite worksheet:

The entrance skills must be worded as SKILLS. "What skills do students need to have BEFORE the course begins in order to be successful?"

For example:

- "Learn how to read college level textbooks" is NOT an entrance skill.
- "Ability to read college level textbooks" IS an entrance skill.

Once the entrance skills are determined, we can then figure out which course(s) are necessary as prerequisites (based on matching up the exit skills (objectives) of that course(s) with the entrance skills of the course in question).

Prerequisite Worksheet

ENTRANCE SKILLS FOR **(the course in question)**
(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Demonstrate proper laboratory techniques, including pipetting, measurement, microscopy, and solution preparation
B)	Apply the scientific method to design, conduct, and document basic biotechnology laboratory experiments
C)	Use laboratory equipment and introductory instrumentation to carry out biotechnology-related procedures safely and accurately
D)	Identify and troubleshoot common experimental errors using basic root cause and analysis strategies
E)	Follow and implement standard operating procedures (SOPs) and laboratory safety protocols, including appropriate use of PPE.
F)	Record and organize experimental laboratory notebooks following industry-style documentation practices.

EXIT SKILLS (objectives) FOR **(the prerequisite course)**
(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1	Analyze biotechnology company structures and biomanufacturing workflows, including workforce roles and production processes.
2	Correlate form to function for cellular structures involved with animal and plant metabolism, regulation of cell cycles, and signal transduction.
3	Demonstrate confidence in their understanding of biological concepts and the scientific method to evaluate and critique current media or a scientific report.

	ENTRANCE SKILLS FOR (BIOL 32)						
EXIT SKILLS FOR BIOL 21		A	B	C	D	E	F
	1		**X**	**X**	**X**		
	2						
	3		**X**			**X**	**X**

Prerequisite / Corequisite Checklist and Worksheet

(Enter Discipline and Course # here)

Biotechnology: BIOL 32

Prerequisite: Biotechnology, BIOL 30; Fundamentals of Biotechnology 1
Other prerequisites, corequisites, and advisories also required for this course: (Please note that a separate sheet is required for each prerequisite, corequisite, or advisory)
BIOL21 Cell Biology and Evolution

SECTION 1 - CONTENT REVIEW: If any criterion is not met, the prerequisite will be disallowed.

Criterion	Met	Not Met
1. Faculty with appropriate expertise have been involved in the determination of the prerequisite, corequisite or advisory.	✓	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.	✓	
3. Selection of this prerequisite, corequisite or advisory is based on tests, the type and number of examinations, and grading criteria.	✓	
4. Selection of this prerequisite, corequisite or advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.	✓	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	✓	
6. The course materials presented in this prerequisite or corequisite have been reviewed and determined to teach knowledge or skills needed for success in the course requiring this prerequisite.	✓	
7. The body of knowledge and/or skills necessary for success in the course have been matched with the knowledge and skills developed by the prerequisite, corequisite or advisory.	✓	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	✓	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.	✓	

SECTION II - ADDITIONAL LEVEL OF SCRUTINY:

In addition to the affirmation of content review listed in section I, an additional level of scrutiny is also required. The level of scrutiny depends on which type of prerequisite is involved. There are six types and each is listed below. Please identify which one is being used to justify the proposed prerequisite. The additional level of scrutiny corresponding to each type of prerequisite is identified below.

Type 1: Standard Prerequisite (required prerequisite at UC or CSU)

___ Identify three UC or CSU campuses that offer the equivalent course with the equivalent prerequisite.

List schools here:

Complete the Prerequisite Worksheet

___ Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)
Complete the Prerequisite Worksheet

___ Type 3: Course in communication or computational skills as prerequisite for course other than another skills course (e.g., English 1 prerequisite for Anatomy 1)
Complete the Prerequisite Worksheet
Complete Data Analysis

✓ Type 4: Program prerequisites
Prerequisite must be required for at least one of the courses in the program. Explain: This course will provide the necessary foundation pertaining to the parts of the cell,

___ Type 5: Health and Safety
Students who lack the prerequisite might endanger themselves, other students or staff. Explain:

___ Type 6: Recency and other measures of readiness (miscellaneous)
Data must be collected according to sound research principles in order to justify such prerequisites.
Complete the Prerequisite Worksheet

Prerequisites using Content Review

In order to properly justify/substantiate any prerequisite, we need to first determine what skills are necessary for students to be successful (skills without which they will likely not succeed (i.e., pass the course)).

- Keep in mind that "success" in the course means "passing" the course. "Success" does not mean "more likely to get a B or higher".

Once we've identified what are the "entrance skills" necessary for success, we then need to look at the "exit skills" (objectives) of our existing courses to determine which of our courses sufficiently prepares students (based on the entrance skills) to be successful in the course in question.

- It is highly unlikely that there will be a "1-to-1 relationship" between the entrance skills and exits skills.
    - Course A, for example, may have 10 objectives, but perhaps only 5 (or even just 1) are essential for success in Course B. Only the relevant exit skills should be used to justify/substantiate a prerequisite.

Completing the prerequisite worksheet:

The entrance skills must be worded as SKILLS. "What skills do students need to have BEFORE the course begins in order to be successful?"

For example:

- "Learn how to read college level textbooks" is NOT an entrance skill.
- "Ability to read college level textbooks" IS an entrance skill.

Prerequisite Worksheet

ENTRANCE SKILLS FOR **(the course in question)**

(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Demonstrate proper laboratory techniques, including pipetting, measurement, microscopy, and solution preparation
B)	Apply the scientific method to design, conduct, and document basic biotechnology laboratory experiments
C)	Use laboratory equipment and introductory instrumentation to carry out biotechnology-related procedures safely and accurately
D)	Identify and troubleshoot common experimental errors using basic root cause and analysis strategies
E)	Follow and implement standard operating procedures (SOPs) and laboratory safety protocols, including appropriate use of PPE.
F)	Record and organize experimental laboratory notebooks following industry-style documentation practices.

EXIT SKILLS (objectives) FOR **(the prerequisite course)**

(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1	Analyze biotechnology company structures and biomanufacturing workflows, including workforce roles and production processes.
2	Analyze and interpret scientific data using laboratory notebooks, tables, and graphical representations.
3	Implement Good Laboratory Practices (GLP) and standard laboratory safety procedures in laboratory settings.
4	Demonstrate fundamental laboratory techniques, including measurement, solution preparation, and pipetting.
5	Apply foundational concepts in molecular and cellular biology, microbiology, and biotechnology to biotechnology applications and workflows.

	ENTRANCE SKILLS FOR (BIOL 32)						
EXIT SKILLS FOR BIOL 30		A	B	C	D	E	F
	1	**X**		**X**			
	2						**X**
	3		**X**			**X**	**X**
	4	**X**					
	5		**X**		**X**		

Substantial Change:
BIOLOGY 33, Immunoassay Methods

Units:	4.00
Total Instructional Hours (usually 18 per unit):	108.00
Hours per week (full semester equivalent) in Lecture:	3.00
In-Class Lab:	3.00
Arranged:	0.00
Outside-of-Class Hours:	108.00

Transferability:	Transfers to CSU
SMC GE Area:	5: Natural Sciences
Degree Applicability:	Credit – Degree Applicable
Prerequisite(s):	BIOL 30 or MCRBIO 1 or BIOL 3 or BIOL 21 or PHYS 3
Minimum Qualification:	Biotechnology Major in Biology, Biotechnology, Biochemistry, Molecular Biology, Chemistry, or Microbiology, OR the equivalent

I. **Catalog Description**

This course focuses on antibody-based reagents and immunoassay techniques used in biotechnology, biomedical research, and clinical laboratory settings. Students examine the properties of antibodies and antigen–antibody interactions and their application in the identification and quantification of analytes. Students design, perform, and analyze immunoassays and develop skills in data interpretation and troubleshooting. The course develops technical competencies relevant to bioscience and biotechnology careers.

II. **Examples of Appropriate Text or Other Required Reading:**

(include all publication dates; for transferable courses at least one text should have been published within the last 7 years)

1. Scientific Writing 3.0 A Reader and Writer's Guide, Jean-Luc Lebrun and Justin Lebrun, World Scientific © 2022
2. Immunoassay Methods. Assay Guidance Manual, Karen L. Cox, BS, Viswanath Devanarayan, Aidas Kriauciunas, Joseph Manetta, Chahrzad Montrose, and Sitta Sittampalam, NCBI Bookshelf. Eli Lilly & Company and the National Center for Advancing Translational Sciences © 2019
3. The Immunoassay Handbook , 4th, David Wild, Elsevier © 2013
4. Immunoassay: Principle and Methods, Gaurab Karki, Online Biology Notes © 2020
5. Calculations for Molecular Biology and Biotechnology, Frank H. Stephenson., Elsevier © 2016
6. Karen L. Cox, BS, Viswanath Devanarayan, PhD, Aidas Kriauciunas, Joseph Manetta, BS, Chahrzad Montrose, PhD, and Sitta Sittampalam, PhD.. Immunoassay Methods, National Library of Medicine

III. **Course Objectives**

Upon completion of this course, the student will be able to:

1. Apply core immunological principles, including the immune system and antigen–antibody interactions, in research and laboratory settings.
2. Compare and evaluate major immunoassay techniques, including their effectiveness and limitations in generating accurate and reproducible results.
3. Perform common immunoassays and apply them to real-world contexts in biotechnology, research, and clinical applications.
4. Analyze and validate experimental data and troubleshoot technical issues associated with immunoassay methods.
5. Apply Good Laboratory Practices (GLP) in immunoassay workflows and laboratory environments.

IV. **Methods of Presentation:**

Lecture and Discussion, Lab, Observation and Demonstration, Discussion, Critique, Projects, Experiments, Field Trips, Visiting Lecturers, Group Work, Online instructor-provided resources

V. **Course Content**

% of Course	Topic
15.000%	Immunology 101

20.000%	Fundamentals of Immunoassays • Describe antigen–antibody interactions, specificity, affinity, and cross-reactivity • Understand how these principles are applied in immunoassays
25.000%	Application: Types of Immunoassays, advantages, and disadvantages of different types of Immunoassays • Competitive and non-competitive (sandwich): Enzyme-linked immunosorbent assay (ELISA), radioimmunoassay, antibody Microarray, biochemical, fluorescent-labeled Immunoassay, & other variations
20.000%	Data Analysis & Quality Control • Data analysis and graphing • Accuracy vs precision • Limit of detection • Controls and reproducibility
20.000%	Assay optimization, validation, instrumentation, high throughput and automation, and quality control. Sample handling, interference and artifacts, antibody care, manipulation, storage, & disposal
100.000%	Total

VI. **Methods of Evaluation**

% of Course	**Topic**
15%	Exams/Tests: One mid-term exam
10%	Quizzes: lab quizzes
10%	Homework: Homework assignments: Tasks to reinforce concepts covered in class and prepare for upcoming labs
15%	Lab Reports: Lab Notebooks
25%	Final Project: Project Design
25%	Final exam: Comprehensive
100%	Total

VII. **Sample Assignments:**

ELISA: 1. Dose Response of Enzyme-linked Second Antibody Dilutions in LH/Ovulation Test Goals: Construct a set of serial diluted enzyme-linked second antibody in the ovulation test. Perform the ovulation test using serial diluted second antibody to develop a dose-response curve. Use spectrophotometry to measure the absorbance of the final reaction product. Use this result to determine the minimum second antibody concentration required to produce a visible positive ovulation reaction. Student Learning Outcomes: Upon completion of this lab, students will be able to: Create a series of solutions of decreasing concentrations via serial dilutions. Measure the absorbance of solutions with a microplate reader. Generate standard curves in Excel. Evaluate the quality of the dose-response curve by their R2 value and determine the ED50 of the enzyme-linked second antibody (referred to as second antibody below.) Lab Procedures: This lab may be conducted over two days (Part I. Preparation of serial dilution of the second antibody. Part 2. Using these solutions to establish a dose-response curve of the LH/ovulation test.) Material and Methods. Bio-Rad LH detection ovulation test kit. The enzyme-linked second antibody stock solution supplied by Bio-Rad and prepared by the lab technician. Each biotech technician will receive 1 ml of the second antibody working solution. As a biotech technician, you will prepare a set of serial dilutions of the second antibody. You will work in a team of two. But both of you will independently prepare the following solutions and use them in the LH/ovulation test. ** At the end of each step, you will check your teammate's product. For example, check the height of each tube to ascertain that they have the same height for the same expected volume (e.g., 200 ul) as part of the QC step. Remember to document each step in your lab notebook. Preparing Two-Fold Serial Dilution (Dilution Factor of Two) as per p. 2 of LibreTexts. 1.18: Serial

Dilutions and Standard Curves with a Microplate Readers EXCEPT THAT YOU WILL USE SIX MICROFUGE (Eppendorf) TUBES LABELED A1, A2, A3, A4, A5, AND A6 to prepare the serial dilution tubes (1:2, 1:4, 1:8, 1:16, 1:32, 1:64). NOTE. Label your tubes A1 to A6 on the microfuge tube where it will not interfere with the microplate reading (light path). Pipet 100 ul of phosphate buffered saline (PBS) into all six tubes. Pipet 100 ul of the original second antibody working solution provided by the lab technician into A1. Make sure all liquid in the tip is forced into the microfuge tube. Mix this solution using a vortex with the microfuge cap tightly closed for 3 seconds. Tap the microfuge tube gently to move all liquid down the tube. Repeat these steps for tubes A2, A3, A4, A5, and A6. Now all six microfuge tubes should have 100 ul of solution left (except A6 which has 200 ul) with the appropriate second antibody concentration (or dilution). They will be used as the enzyme-linked second antibody in the LH/ovulation detection test. LH/OVULATION TEST. Each student will use ONE row of a microplate provided by the instructor/lab technician. They will be labeled A1, A2, A3, A4, A5, A6, and A7, where A7 is the negative control (what will be a good negative control?) Perform the test according to the instructions of Bio-Rad protocol. At the end of the test (after the substrate is added and appearance of color), take a photo of the row of your reaction products on the microplate. Once all teams have completed this test, read the shared microplate on the microplate reader. Construct a dose-response curve (if any) of your test results and answer questions. Data Analysis. Assuming the second antibody concentration of your starting working solution of A1 (or B1, C1) is 100 ug/ul. What are the second antibody concentrations in A2, A3, A4, A5, A6, and A7 tubes? Data Interpretation and Conclusions Draw a scatter plot graph using Excel and insert the 1) line of best fit, 2) equation of the line, and 3) R2 value. Make sure you label the X and Y axis parameters. Use a separate page for the graph. Write a one sentence hypothesis statement of this experiment. Based on the result, write one sentence to interpret your result. Write a one-sentence statement of conclusion of this experiment

Immunofluorescence (IF) Protocol: Immunofluorescence (IF) Protocol (based on Abcam protocol ICC) Goal: To learn the principles and techniques of immunofluorescence by fixing permeabilizing, staining, and imaging cultured cells in order to visualize the localization of a target protein. This protocol describes the steps for permeabilization, blocking, antibody incubation, counterstaining, and imaging for immunofluorescence staining. 1. Fixation of Adherent Cells with 4% PFA Materials 4% Paraformaldehyde (PFA) in PBS (freshly prepared or commercially prepared) Phosphate-buffered saline (PBS), pH 7.4 Pipettes and sterile tips Biological safety cabinet (if appropriate) PPE (lab coat, gloves, safety glasses) Safety: PFA is toxic and releases formaldehyde vapors. Perform fixation in a chemical fume hood or according to your institution's safety guidelines. Dispose of PFA waste in the designated hazardous waste container. Steps: a) Remove Culture Medium Carefully aspirate the culture medium without disturbing the cell monolayer. b) Wash Cells Gently rinse cells 2 times with PBS. Add enough PBS to completely cover the cells. Aspirate after each wash. c) Add 4% PFA Add sufficient 4% PFA to completely cover the cells. d) Incubate Incubate for 10–15 minutes at room temperature (20–25°C). (Avoid over-fixation, which can reduce antibody accessibility.) e) Remove PFA Aspirate the fixative carefully. Dispose of it in hazardous chemical waste. f) Wash cells three times with PBS: At this point, cells are fixed. 2. Permeabilization Permeabilization allows antibodies to access intracellular epitopes. This step is especially important when using paraformaldehyde (PFA) fixation. Prepare Permeabilization Buffer 0.1% Triton X-100 diluted in PBS Steps Cover cells completely with permeabilization solution Incubate for 5 minutes at room temperature. Wash cells 3 times with PBS. 2. Blocking Blocking reduces non-specific antibody binding and minimizes background fluorescence. Prepare Blocking Buffer 2% FBS diluted in PBS Steps Incubate cells with blocking buffer for 1h at room temperature. Proceed directly to antibody incubation. 3. Primary Antibody Incubation Prepare Antibody Dilution Buffer Use: PBS-T containing: 0.1% Tween-20 2% FBS Steps Dilute primary antibody 1:200 (anti-SMA) Add sufficient antibody solution to fully cover the samples. Incubate: 2 hours at room temperature, or Overnight at 4°C Wash samples 3 times with PBS or PBS-T. 4. Secondary Antibody Incubation Steps Dilute fluorophore-conjugated secondary antibody in antibody dilution buffer. Incubate samples for 1 hour at room temperature in the dark. Wash samples 3 times with PBS or PBS-T. Typical secondary antibody dilution: 1:1000–1:2000. Protect samples from light to avoid photobleaching. 5. Mounting medium with DAPI (ProLong Gold Antifade with DAPI) And in the mounting step: Add 1–2 drops of ProLong Gold Antifade Mountant with DAPI onto the slide before placing the coverslip. Incubate overnight at RT or 4C Next day, Image directly using an inverted fluorescence microscope. Store slides at 4°C in the dark

VIII. **Student Learning Outcomes:**

1. Design and execute immunologic testing methods to address specific biological and clinical questions.
2. Analyze antibody-based testing methods and their applications in research and clinical laboratory settings.
3. Differentiate the advantages and limitations of immunoassay techniques.
4. Interpret experimental results from immunoassays to identify and quantify biological substances.

Prerequisite / Corequisite Checklist and Worksheet

(Enter Discipline and Course # here)
Biotechnology: BIOL 33
Prerequisite: Biology and BIOL 3; Fundamentals of Biology
Other prerequisites, corequisites, and advisories also required for this course: (Please note that a separate sheet is required for each prerequisite, corequisite, or advisory)

SECTION 1 - CONTENT REVIEW: If any criterion is not met, the prerequisite will be disallowed.

Criterion	Met	Not Met
1. Faculty with appropriate expertise have been involved in the determination of the prerequisite, corequisite or advisory.	✓	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.	✓	
3. Selection of this prerequisite, corequisite or advisory is based on tests, the type and number of examinations, and grading criteria.	✓	
4. Selection of this prerequisite, corequisite or advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.	✓	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	✓	
6. The course materials presented in this prerequisite or corequisite have been reviewed and determined to teach knowledge or skills needed for success in the course requiring this prerequisite.	✓	
7. The body of knowledge and/or skills necessary for success in the course have been matched with the knowledge and skills developed by the prerequisite, corequisite or advisory.	✓	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	✓	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.	✓	

SECTION II - ADDITIONAL LEVEL OF SCRUTINY:

In addition to the affirmation of content review listed in section I, an additional level of scrutiny is also required. The level of scrutiny depends on which type of prerequisite is involved. There are six types and each is listed below. Please identify which one is being used to justify the proposed prerequisite. The additional level of scrutiny corresponding to each type of prerequisite is identified below.

Type 1: Standard Prerequisite (required prerequisite at UC or CSU)

___ Identify three UC or CSU campuses that offer the equivalent course with the equivalent prerequisite.

List schools here:

Complete the Prerequisite Worksheet

___ Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)

Complete the Prerequisite Worksheet

Type 3: Course in communication or computational skills as prerequisite for course other than another skills course (e.g., English 1 prerequisite for Anatomy 1)

___ **Complete the Prerequisite Worksheet**

Complete Data Analysis

Type 4: Program prerequisites

✓ **Prerequisite must be required for at least one of the courses in the program. Explain:** This prerequisite ensures students have foundational knowledge of cellular biology and scientific reasoning. Understanding cell structure, function, and basic biological processes is necessary for interpreting cell growth, viability, and assay results in BIOL 33.

Type 5: Health and Safety

___ **Students who lack the prerequisite might endanger themselves, other students or staff. Explain:**

Type 6: Recency and other measures of readiness (miscellaneous)

___ **Data must be collected according to sound research principles in order to justify such prerequisites.**

Complete the Prerequisite Worksheet

Prerequisites using Content Review

In order to properly justify/substantiate any prerequisite, we need to first determine what skills are necessary for students to be successful (skills without which they will likely not succeed (i.e., pass the course)).

- Keep in mind that "success" in the course means "passing" the course. "Success" does not mean "more likely to get a B or higher".

Once we've identified what are the "entrance skills" necessary for success, we then need to look at the "exit skills" (objectives) of our existing courses to determine which of our courses sufficiently prepares students (based on the entrance skills) to be successful in the course in question.

- It is highly unlikely that there will be a "1-to-1 relationship" between the entrance skills and exits skills.
    - Course A, for example, may have 10 objectives, but perhaps only 5 (or even just 1) are essential for success in Course B. Only the relevant exit skills should be used to justify/substantiate a prerequisite.

Completing the prerequisite worksheet:

The entrance skills must be worded as SKILLS. "What skills do students need to have BEFORE the course begins in order to be successful?"

For example:

- "Learn how to read college level textbooks" is NOT an entrance skill.
- "Ability to read college level textbooks" IS an entrance skill.

Once the entrance skills are determined, we can then figure out which course(s) are necessary as prerequisites (based on matching up the exit skills (objectives) of that course(s) with the entrance skills of the course in question).

Prerequisite Worksheet

ENTRANCE SKILLS FOR **(the course in question)**

(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Ability to apply the scientific method to biotechnology laboratory problems
B)	Ability to understand basic cell and molecular biology concepts
C)	Ability to follow laboratory safety and sterile technique procedures
D)	Ability to use laboratory equipment and perform basic experimental techniques
E)	Ability to analyze and interpret biological data, graphs, and experimental results
F)	Ability to understand antigen-antibody interactions and basic immunology concepts
G)	Ability to troubleshoot experimental procedures and interpret assay outcomes
H)	Ability to document and communicate scientific findings appropriately

EXIT SKILLS (objectives) FOR **(the prerequisite course)**

(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Describe cell structure and function.
2.	Explain basic molecular and cellular processes.
3.	Apply the scientific method and logical reasoning.
4.	Interpret biological data and graphs.
5.	Understand basic genetics and biological systems.
6.	Analyze experimental results.
7.	Communicate scientific concepts.
8.	Apply foundational biology to lab contexts.

	ENTRANCE SKILLS FOR (BIOL 33)								
EXIT SKILLS FOR BIOL 3		A	B	C	D	E	F	G	H
	1	**X**					**X**		
	2		**X**			**X**			
	3	**X**	**X**	**X**				**X**	
	4						**X**		
	5								**X**
	6			**X**					
	7	**X**	**X**			**X**			**X**
	8	**X**							**X**

Prerequisite / Corequisite Checklist and Worksheet

(Enter Discipline and Course # here)
Biotechnology: BIOL 33
Prerequisite: Biology and BIOL 21; Cell Biology and Evolution
Other prerequisites, corequisites, and advisories also required for this course: (Please note that a separate sheet is required for each prerequisite, corequisite, or advisory)

SECTION 1 - CONTENT REVIEW: If any criterion is not met, the prerequisite will be disallowed.

Criterion	Met	Not Met
1. Faculty with appropriate expertise have been involved in the determination of the prerequisite, corequisite or advisory.	✓	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.	✓	
3. Selection of this prerequisite, corequisite or advisory is based on tests, the type and number of examinations, and grading criteria.	✓	
4. Selection of this prerequisite, corequisite or advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.	✓	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	✓	
6. The course materials presented in this prerequisite or corequisite have been reviewed and determined to teach knowledge or skills needed for success in the course requiring this prerequisite.	✓	
7. The body of knowledge and/or skills necessary for success in the course have been matched with the knowledge and skills developed by the prerequisite, corequisite or advisory.	✓	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	✓	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.	✓	

SECTION II - ADDITIONAL LEVEL OF SCRUTINY:

In addition to the affirmation of content review listed in section I, an additional level of scrutiny is also required. The level of scrutiny depends on which type of prerequisite is involved. There are six types and each is listed below. Please identify which one is being used to justify the proposed prerequisite. The additional level of scrutiny corresponding to each type of prerequisite is identified below.

Type 1: Standard Prerequisite (required prerequisite at UC or CSU)

___ Identify three UC or CSU campuses that offer the equivalent course with the equivalent prerequisite.

List schools here:

Complete the Prerequisite Worksheet

___ Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)

Complete the Prerequisite Worksheet

modified 09/26/2012

Type 3: Course in communication or computational skills as prerequisite for course other than another skills course (e.g., English 1 prerequisite for Anatomy 1)

___ **Complete the Prerequisite Worksheet**

Complete Data Analysis

Type 4: Program prerequisites

✓ **Prerequisite must be required for at least one of the courses in the program. Explain:** This prerequisite ensures students have an advanced understanding of eukaryotic cell structure and function. BIOL 21 prepares students to analyze cellular processes, interpret experimental results, and apply microscopy and analytical techniques required for cell culture and immunoassays in BIOL 33.

Type 5: Health and Safety

___ **Students who lack the prerequisite might endanger themselves, other students or staff. Explain:**

Type 6: Recency and other measures of readiness (miscellaneous)

___ **Data must be collected according to sound research principles in order to justify such prerequisites.**

Complete the Prerequisite Worksheet

Prerequisites using Content Review

In order to properly justify/substantiate any prerequisite, we need to first determine what skills are <u>necessary</u> for students to be successful (skills without which they will likely not succeed (i.e., pass the course)).

- Keep in mind that "success" in the course means "passing" the course. "Success" does not mean "more likely to get a B or higher".

Once we've identified what are the "entrance skills" necessary for success, we then need to look at the "exit skills" (objectives) of our existing courses to determine which of our courses sufficiently prepares students (based on the entrance skills) to be successful in the course in question.

- It is highly unlikely that there will be a "1-to-1 relationship" between the entrance skills and exits skills.
    - Course A, for example, may have 10 objectives, but perhaps only 5 (or even just 1) are essential for success in Course B. Only the relevant exit skills should be used to justify/substantiate a prerequisite.

Completing the prerequisite worksheet:

The entrance skills must be worded as SKILLS. "What skills do students need to have BEFORE the course begins in order to be successful?"

For example:

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- "Ability to read college level textbooks" IS an entrance skill.

Once the entrance skills are determined, we can then figure out which course(s) are necessary as prerequisites (based on matching up the exit skills (objectives) of that course(s) with the entrance skills of the course in question).

Prerequisite Worksheet

ENTRANCE SKILLS FOR **(the course in question)**

(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Ability to apply the scientific method to biotechnology laboratory problems
B)	Ability to understand basic cell and molecular biology concepts
C)	Ability to follow laboratory safety and sterile technique procedures
D)	Ability to use laboratory equipment and perform basic experimental techniques
E)	Ability to analyze and interpret biological data, graphs, and experimental results
F)	Ability to understand antigen-antibody interactions and basic immunology concepts
G)	Ability to troubleshoot experimental procedures and interpret assay outcomes
H)	Ability to document and communicate scientific findings appropriately

EXIT SKILLS (objectives) FOR **(the prerequisite course)**

(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Use the scientific method in designing experiments and interpreting data
2.	Demonstrate mastery biology laboratory techniques
3.	Calibrate and use scientific instruments and microscopes
4.	Describe cell structure and function
5.	Compare characteristics of different cell types
6.	Demonstrate independent learning skills
7.	Analyze and interpret biological data
8.	Apply laboratory procedures safely and appropriately

		ENTRANCE SKILLS FOR (BIOL 33)							
		A	B	C	D	E	F	G	H
EXIT SKILLS FOR BIOL 21	1	**X**				**X**		**X**	
	2			**X**	**X**				
	3				**X**				
	4		**X**				**X**		
	5		**X**				**X**		
	6								**X**
	7	**X**				**X**		**X**	

	8			X	X				X

Prerequisite / Corequisite Checklist and Worksheet

(Enter Discipline and Course # here)
Biotechnology: BIOL 33
Prerequisite: Biotechnology and BIOL 30; Fundamentals of Biotechnology I
Other prerequisites, corequisites, and advisories also required for this course: (Please note that a separate sheet is required for each prerequisite, corequisite, or advisory)

SECTION 1 - CONTENT REVIEW: If any criterion is not met, the prerequisite will be disallowed.

Criterion	Met	Not Met
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7. The body of knowledge and/or skills necessary for success in the course have been matched with the knowledge and skills developed by the prerequisite, corequisite or advisory.	✓	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	✓	
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List schools here:

Complete the Prerequisite Worksheet

___ Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)

Complete the Prerequisite Worksheet

___ Type 3: Course in communication or computational skills as prerequisite for course other than another skills course (e.g., English 1 prerequisite for Anatomy 1)

Complete the Prerequisite Worksheet

Complete Data Analysis

Type 4: Program prerequisites

✓ **Prerequisite must be required for at least one of the courses in the program. Explain:** This prerequisite is part of the biotechnology program pathway and is required to ensure students have foundational laboratory, analytical, and documentation skills necessary for success in BIOL 33. The course builds on prior training in laboratory techniques, experimental design, and data analysis introduced in BIOL 30.

___ Type 5: Health and Safety

Students who lack the prerequisite might endanger themselves, other students or staff. Explain:

Type 6: Recency and other measures of readiness (miscellaneous)

___ **Data must be collected according to sound research principles in order to justify such prerequisites.**

Complete the Prerequisite Worksheet

Prerequisites using Content Review

In order to properly justify/substantiate any prerequisite, we need to first determine what skills are necessary for students to be successful (skills without which they will likely not succeed (i.e., pass the course)).

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For example:

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- "Ability to read college level textbooks" IS an entrance skill.

Once the entrance skills are determined, we can then figure out which course(s) are necessary as prerequisites (based on matching up the exit skills (objectives) of that course(s) with the entrance skills of the course in question).

Prerequisite Worksheet

ENTRANCE SKILLS FOR **(the course in question)**

(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Ability to apply the scientific method to biotechnology laboratory problems
B)	Ability to understand basic cell and molecular biology concepts
C)	Ability to follow laboratory safety and sterile technique procedures
D)	Ability to use laboratory equipment and perform basic experimental techniques
E)	Ability to analyze and interpret biological data, graphs, and experimental results
F)	Ability to understand antigen-antibody interactions and basic immunology concepts
G)	Ability to troubleshoot experimental procedures and interpret assay outcomes
H)	Ability to document and communicate scientific findings appropriately

EXIT SKILLS (objectives) FOR **(the prerequisite course)**

(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Demonstrate proper laboratory techniques including pipetting and solution preparation.
2.	Apply the scientific method to design and conduct experiments.
3.	Use laboratory equipment safely and accurately.
4.	Record and organize data using lab notebooks and tables.
5.	Identify and troubleshoot common experimental errors.
6.	Follow SOPs and laboratory safety procedures.
7.	Analyze experimental results and draw conclusions.
8.	Communicate experimental findings using appropriate documentation.

	ENTRANCE SKILLS FOR (BIOL 33)								
EXIT SKILLS FOR BIOL 30		A	B	C	D	E	F	G	H
	1	**X**					**X**		
	2		**X**			**X**			
	3	**X**	**X**	**X**	**X**				
	4							**X**	
	5						**X**		
	6								**X**
	7	**X**	**X**	**X**	**X**	**X**			
	8								**X**

Prerequisite / Corequisite Checklist and Worksheet

(Enter Discipline and Course # here)
Biotechnology: BIOL 33
Prerequisite: Microbiology and MICRO 1; Fundamentals of Microbiology
Other prerequisites, corequisites, and advisories also required for this course: (Please note that a separate sheet is required for each prerequisite, corequisite, or advisory)

SECTION 1 - CONTENT REVIEW: If any criterion is not met, the prerequisite will be disallowed.

Criterion	Met	Not Met
1. Faculty with appropriate expertise have been involved in the determination of the prerequisite, corequisite or advisory.	✓	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.	✓	
3. Selection of this prerequisite, corequisite or advisory is based on tests, the type and number of examinations, and grading criteria.	✓	
4. Selection of this prerequisite, corequisite or advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.	✓	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	✓	
6. The course materials presented in this prerequisite or corequisite have been reviewed and determined to teach knowledge or skills needed for success in the course requiring this prerequisite.	✓	
7. The body of knowledge and/or skills necessary for success in the course have been matched with the knowledge and skills developed by the prerequisite, corequisite or advisory.	✓	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	✓	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.	✓	

SECTION II - ADDITIONAL LEVEL OF SCRUTINY:

In addition to the affirmation of content review listed in section I, an additional level of scrutiny is also required. The level of scrutiny depends on which type of prerequisite is involved. There are six types and each is listed below. Please identify which one is being used to justify the proposed prerequisite. The additional level of scrutiny corresponding to each type of prerequisite is identified below.

Type 1: Standard Prerequisite (required prerequisite at UC or CSU)

___ Identify three UC or CSU campuses that offer the equivalent course with the equivalent prerequisite.

List schools here:

Complete the Prerequisite Worksheet

___ Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)

Complete the Prerequisite Worksheet

Type 3: Course in communication or computational skills as prerequisite for course other than another skills course (e.g., English 1 prerequisite for Anatomy 1)

___ **Complete the Prerequisite Worksheet**

Complete Data Analysis

Type 4: Program prerequisites

✓ **Prerequisite must be required for at least one of the courses in the program. Explain:** This prerequisite is part of the biotechnology program pathway and ensures students have experience with aseptic technique, contamination control, and laboratory safety. These skills are essential for maintaining sterile conditions and performing accurate cell culture and immunoassay techniques in BIOL 33.

Type 5: Health and Safety

___ **Students who lack the prerequisite might endanger themselves, other students or staff. Explain:**

Type 6: Recency and other measures of readiness (miscellaneous)

___ **Data must be collected according to sound research principles in order to justify such prerequisites.**

Complete the Prerequisite Worksheet

Prerequisites using Content Review

In order to properly justify/substantiate any prerequisite, we need to first determine what skills are <u>necessary</u> for students to be successful (skills without which they will likely not succeed (i.e., pass the course)).

- Keep in mind that "success" in the course means "passing" the course. "Success" does not mean "more likely to get a B or higher".

Once we've identified what are the "entrance skills" necessary for success, we then need to look at the "exit skills" (objectives) of our existing courses to determine which of our courses sufficiently prepares students (based on the entrance skills) to be successful in the course in question.

- It is highly unlikely that there will be a "1-to-1 relationship" between the entrance skills and exits skills.
    - Course A, for example, may have 10 objectives, but perhaps only 5 (or even just 1) are essential for success in Course B. Only the relevant exit skills should be used to justify/substantiate a prerequisite.

Completing the prerequisite worksheet:

The entrance skills must be worded as SKILLS. "What skills do students need to have BEFORE the course begins in order to be successful?"

For example:

- "Learn how to read college level textbooks" is NOT an entrance skill.
- "Ability to read college level textbooks" IS an entrance skill.

Once the entrance skills are determined, we can then figure out which course(s) are necessary as prerequisites (based on matching up the exit skills (objectives) of that course(s) with the entrance skills of the course in question).

Prerequisite Worksheet

ENTRANCE SKILLS FOR **(the course in question)**

(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Ability to apply the scientific method to biotechnology laboratory problems
B)	Ability to understand basic cell and molecular biology concepts
C)	Ability to follow laboratory safety and sterile technique procedures
D)	Ability to use laboratory equipment and perform basic experimental techniques
E)	Ability to analyze and interpret biological data, graphs, and experimental results
F)	Ability to understand antigen-antibody interactions and basic immunology concepts
G)	Ability to troubleshoot experimental procedures and interpret assay outcomes
H)	Ability to document and communicate scientific findings appropriately

EXIT SKILLS (objectives) FOR **(the prerequisite course)**

(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Demonstrate aseptic technique and microbial handling.
2.	Apply contamination control procedures.
3.	Use microscopes and lab equipment safely.
4.	Perform and interpret microbiological assays.
5.	Record and analyze experimental data.
6.	Follow laboratory safety and biohazard protocols.
7.	Identify sources of contamination and error.
8.	Apply scientific reasoning to lab results.

	ENTRANCE SKILLS FOR (BIOL 33)								
EXIT SKILLS FOR MICRO 1		A	B	C	D	E	F	G	H
	1	**X**					**X**		
	2		**X**			**X**			
	3	**X**	**X**	**X**	**X**			**X**	
	4						**X**	**X**	
	5						**X**		
	6			**X**				**X**	**X**
	7	**X**	**X**	**X**	**X**	**X**			**X**
	8								**X**

Prerequisite / Corequisite Checklist and Worksheet

(Enter Discipline and Course # here)
Biotechnology: BIOL 33
Prerequisite: Physiology and PHYS 3; Human Physiology
Other prerequisites, corequisites, and advisories also required for this course: (Please note that a separate sheet is required for each prerequisite, corequisite, or advisory)

SECTION 1 - CONTENT REVIEW: If any criterion is not met, the prerequisite will be disallowed.

Criterion	Met	Not Met
1. Faculty with appropriate expertise have been involved in the determination of the prerequisite, corequisite or advisory.	✓	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.	✓	
3. Selection of this prerequisite, corequisite or advisory is based on tests, the type and number of examinations, and grading criteria.	✓	
4. Selection of this prerequisite, corequisite or advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.	✓	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	✓	
6. The course materials presented in this prerequisite or corequisite have been reviewed and determined to teach knowledge or skills needed for success in the course requiring this prerequisite.	✓	
7. The body of knowledge and/or skills necessary for success in the course have been matched with the knowledge and skills developed by the prerequisite, corequisite or advisory.	✓	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	✓	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.	✓	

SECTION II - ADDITIONAL LEVEL OF SCRUTINY:

In addition to the affirmation of content review listed in section I, an additional level of scrutiny is also required. The level of scrutiny depends on which type of prerequisite is involved. There are six types and each is listed below. Please identify which one is being used to justify the proposed prerequisite. The additional level of scrutiny corresponding to each type of prerequisite is identified below.

Type 1: Standard Prerequisite (required prerequisite at UC or CSU)

___ Identify three UC or CSU campuses that offer the equivalent course with the equivalent prerequisite.

List schools here:

Complete the Prerequisite Worksheet

___ Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)

Complete the Prerequisite Worksheet

Type 3: Course in communication or computational skills as prerequisite for course other than another skills course (e.g., English 1 prerequisite for Anatomy 1)

___ **Complete the Prerequisite Worksheet**

Complete Data Analysis

Type 4: Program prerequisites

✓ **Prerequisite must be required for at least one of the courses in the program. Explain:** This prerequisite supports development of analytical, quantitative, and problem-solving skills necessary for success in BIOL 33. Students apply data analysis, scientific reasoning, and interpretation skills to evaluate experimental results and troubleshoot laboratory procedures.

Type 5: Health and Safety

___ **Students who lack the prerequisite might endanger themselves, other students or staff. Explain:**

Type 6: Recency and other measures of readiness (miscellaneous)

___ **Data must be collected according to sound research principles in order to justify such prerequisites.**

Complete the Prerequisite Worksheet

Prerequisites using Content Review

In order to properly justify/substantiate any prerequisite, we need to first determine what skills are <u>necessary</u> for students to be successful (skills without which they will likely not succeed (i.e., pass the course)).

- Keep in mind that "success" in the course means "passing" the course. "Success" does not mean "more likely to get a B or higher".

Once we've identified what are the "entrance skills" necessary for success, we then need to look at the "exit skills" (objectives) of our existing courses to determine which of our courses sufficiently prepares students (based on the entrance skills) to be successful in the course in question.

- It is highly unlikely that there will be a "1-to-1 relationship" between the entrance skills and exits skills.
    - Course A, for example, may have 10 objectives, but perhaps only 5 (or even just 1) are essential for success in Course B. Only the relevant exit skills should be used to justify/substantiate a prerequisite.

Completing the prerequisite worksheet:

The entrance skills must be worded as SKILLS. "What skills do students need to have BEFORE the course begins in order to be successful?"

For example:

- "Learn how to read college level textbooks" is NOT an entrance skill.
- "Ability to read college level textbooks" IS an entrance skill.

Once the entrance skills are determined, we can then figure out which course(s) are necessary as prerequisites (based on matching up the exit skills (objectives) of that course(s) with the entrance skills of the course in question).

Prerequisite Worksheet

ENTRANCE SKILLS FOR **(the course in question)**

(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Ability to apply the scientific method to biotechnology laboratory problems
B)	Ability to understand basic cell and molecular biology concepts
C)	Ability to follow laboratory safety and sterile technique procedures
D)	Ability to use laboratory equipment and perform basic experimental techniques
E)	Ability to analyze and interpret biological data, graphs, and experimental results
F)	Ability to understand antigen-antibody interactions and basic immunology concepts
G)	Ability to troubleshoot experimental procedures and interpret assay outcomes
H)	Ability to document and communicate scientific findings appropriately

EXIT SKILLS (objectives) FOR **(the prerequisite course)**

(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Explain concepts of cell structure and physiological function
2.	Apply physiological concepts to human health problems
3.	Analyze experimental and physiological data
4.	Conduct experiments and record data appropriately
5.	Apply scientific reasoning to physiological problems
6.	Use laboratory techniques and equipment appropriately
7.	Demonstrate critical thinking and problem-solving skills
8.	Communicate scientific observations and conclusions

		ENTRANCE SKILLS FOR (BIOL 33)							
		A	B	C	D	E	F	G	H
EXIT SKILLS FOR PHYS 3	1		**X**				**X**		
	2	**X**	**X**						
	3					**X**		**X**	
	4				**X**				**X**
	5	**X**						**X**	
	6			**X**	**X**				
	7	**X**	**X**			**X**		**X**	

	8								X

Substantial Change:
BIOLOGY 36, Quality Control and Assurance

Units:	3.00
Total Instructional Hours (usually 18 per unit):	54.00
Hours per week (full semester equivalent) in Lecture:	3.00
In-Class Lab:	0.00
Arranged:	0.00
Outside-of-Class Hours:	108.00
Transferability:	Transfers to CSU
SMC GE Area:	5: Natural Sciences
Degree Applicability:	Credit – Degree Applicable

I. **Catalog Description**

This course introduces principles and practices of quality assurance, quality control, and quality management systems in biotechnology and biopharmaceutical settings. Students examine regulatory compliance, documentation practices, data integrity, validation, and auditing within industry frameworks. Emphasis is placed on root cause analysis, corrective and preventive actions, risk assessment, and continuous improvement. Students apply quality principles to biotechnology scenarios and develop skills relevant to entry-level roles in quality, manufacturing, and regulatory environments.

II. **Examples of Appropriate Text or Other Required Reading:**

(include all publication dates; for transferable courses at least one text should have been published within the last 7 years)

1. The ASQ Quality Improvement Pocket Guide, 4th, Grace L. Duffy, Quality Press © 2013, ISBN: 9781636941332
2. Certified Quality Improvement Associate Handbook, 4th, Grace L. Duffy and Sandra L. Furterer, ASQ Excellence © 2020, ISBN: 9781951058135
3. Primary and secondary journal articles will be the main sources used in this course.

III. **Course Objectives**

Upon completion of this course, the student will be able to:

1. Apply quality assurance (QA), quality control (QC), and quality management system (QMS) concepts to biotechnology and biopharmaceutical processes.
2. Utilize quality tools and methodologies, including root cause analysis and continuous improvement techniques, to evaluate and improve product and process quality.
3. Interpret and apply regulatory and compliance requirements, including current Good Manufacturing Practices (cGMP), documentation standards (SOPs, batch records, GDP), and data integrity principles.
4. Analyze quality-related events such as deviations and nonconformance results through appropriate investigation and corrective and preventive actions (CAPA).
5. Apply principles from the Quality Body of Knowledge (QBOK) to real-world quality scenarios in preparation for certification and entry-level roles in biotechnology.

IV. **Methods of Presentation:**

Lecture and Discussion, Distance Education, Discussion, Projects, Online instructor-provided resources, Group Work, Observation and Demonstration

V. **Course Content**

% of Course	Topic
8.000%	Introduction to Quality Principles & CQIA Body of Knowledge Overview of quality concepts, quality culture, continuous improvement, and alignment with CQIA QBOK. Define quality from multiple perspectives, understand the evolution of quality, recognize roles in quality. Quality policy and planning, quality pioneers.
8.000%	Quality Management Systems (QMS) & ISO Standards Structure of QMS, documentation hierarchy, and implementation in biotechnology environments.

8.000%	Regulatory Frameworks & cGMP (FDA) Role of the U.S. Food and Drug Administration, cGMP requirements, inspections, and compliance expectations.
8.000%	Quality Assurance (QA) & Quality Control (QC) Roles, responsibilities, batch records, release criteria, sterilization control, and stability testing.
8.000%	Documentation & Data Integrity (GDP, SOPs, ALCOA+) Good Documentation Practices, SOPs, batch records, and data integrity principles.
10.000%	Process Validation & Qualification (DQ, IQ, OQ, PQ) Validation lifecycle, equipment qualification, and process validation strategies.
8.000%	Analytical Methods, Validation Parameters, Measurements and Basic Statistics Accuracy, precision, specificity, and method validation.
12.000%	Deviation Management, OOS, CAPA & Root Cause Analysis Deviation handling, nonconformance, investigations, CAPA systems, and problem resolution.
8.000%	Change Control & Risk Management Formal change control systems, risk assessment, and impact evaluation, cost of quality, prevention, appraisal, failure costs.
8.000%	Process Improvement Tools (Lean, Six Sigma, DMAIC, PDCA) Continuous improvement methodologies and quality tools (Pareto, Ishikawa, control charts, cause-and-effect diagrams, histograms).
6.000%	Auditing & Supplier Quality Internal/external audits, supplier qualification, identify customer needs, translate VOC to CTQs and quality systems oversight.
4.000%	Team Dynamics & Communication in Quality Systems Cross-functional collaboration and communication in regulated environments. Apply facilitation skills, conflict resolution
4.000%	Biotech Industry Applications & Product Lifecycle Application of quality principles to drug development, manufacturing, and regulatory submission.
100.000%	Total

VI. **Methods of Evaluation**

% of Course	**Topic**
10%	Class Participation: Case studies (CAPA, deviations, FDA scenarios), discussion, short applied exercises
15%	Written assignments: SOP critique or writing, data integrity/ GDP analysis
20%	Exams/Tests: CQIA style
15%	Homework
15%	Projects: projects CAPA, investigations, QA problem solving
15%	Quizzes: weekly/bi-weekly quizzes
10%	Final exam: CQIA, cumulative understanding

100%	Total

VII. **Sample Assignments:**

Discussion Board Entry : Quality Systems & Regulatory Case Study Discussion Instructions: Students will review a real-world or simulated regulatory case study involving quality system failures (e.g., FDA warning letter, recall, or inspection finding). To complete this assignment, students will: -Summarize the quality issue and identify breakdowns in the quality management system (QMS) -Identify which regulatory requirements were not met (e.g., cGMP, documentation, validation) -Discuss the role of quality assurance (QA) and quality control (QC) in preventing the issue -Propose improvements using quality tools (e.g., CAPA, change control, risk assessment) -Reflect on how proper implementation of quality systems could have prevented the issue

Writing Assignment: CAPA Investigation Assignment Instructions: Students will analyze a simulated quality event in a biotechnology or biopharmaceutical setting involving a deviation, out-of-specification (OOS) result, or contamination issue. To complete this assignment, students will: -Review a provided case study describing a quality issue (e.g., failed batch, contamination event, or data integrity concern) -Identify and define the problem, including classification (deviation, OOS, or nonconformance) -Perform a root cause analysis using an appropriate tool (e.g., Ishikawa diagram or 5 Whys) -Propose corrective and preventive actions (CAPA) -Evaluate the potential impact on product quality, patient safety, and regulatory compliance -Recommend documentation and reporting steps in alignment with Good Documentation Practices (GDP) Students will submit a written report (3–5 pages) summarizing their findings and proposed CAPA plan. Reports should demonstrate application of quality principles and regulatory awareness.

VIII. **Student Learning Outcomes:**

1. Analyze principles of quality assurance, quality control, and quality management systems in biotechnology and biopharmaceutical environments.
2. Apply quality tools and methods to evaluate and improve product and process quality.
3. Evaluate documentation practices for compliance with regulatory requirements in biotechnology settings.
4. Investigate deviations, nonconformances, and other quality-related events and determine appropriate corrective actions.
5. Assess quality system components, including auditing, validation, and risk management.

BIOL 36 Distance Education Application

☑ Online/Classroom Hybrid (not a delivery option when campus is closed)

1a. Instructor - Student Interaction:

Instructor-student interaction will occur multiple times per week through Canvas. Instruction will be delivered through recorded lectures, readings, and instructional materials. Interaction will occur through announcements, discussion boards, assignment feedback, and email. The instructor will provide timely feedback on assignments and assessments. Weekly virtual office hours will be offered, with additional support available by appointment.

1b. Student - Student Interaction:

Students will interact regularly through Canvas discussion boards, peer review activities, and collaborative assignments. Students will analyze case studies, respond to peers, and engage in discussions related to quality assurance practices, regulatory standards, and industry scenarios. These interactions will occur weekly and support collaborative learning and critical thinking.

1c. Student - Content Interaction:

Students will engage with course content multiple times per week through lecture videos, readings, case studies, and assignments delivered via Canvas. Content includes quality assurance principles, regulatory frameworks, and industry practices. Students will apply concepts through written assignments, discussions, quizzes, and exams.

1d. Distance Ed Interactions:

Online class activities that promote class interaction and engagement	Brief Description	% of Online Course Hours
Project Presentation	Students complete applied projects including CAPA investigations, quality problem-solving scenarios, and case-based analysis demonstrating application of course concepts.	15.00%

Threaded Discussions	Students participate in discussion boards analyzing case studies (CAPA, deviations, FDA scenarios) and engaging in peer responses and applied problem-solving.	20.00%
Online Lecture	Students engage with recorded lectures, readings, and instructional materials through Canvas covering quality assurance concepts, regulatory standards, and industry practices.	25.00%
Written assignments	Students complete written assignments such as SOP critique or development, data integrity/GDP analysis, and applied quality exercises submitted through Canvas.	20.00%
Exams	Students complete quizzes and exams through Canvas assessing CQIA-style concepts, regulatory knowledge, and application of quality assurance principles.	20.00%

2. Organization of Content:

Course content will be organized into weekly modules in Canvas. Each module will include learning objectives, lecture materials, readings, case studies, and assessments. Instructional materials will include recorded lectures, multimedia resources, and written content. Technologies used include Canvas and video conferencing tools as needed. The course is designed to support student engagement and alignment with course learning outcomes.

3. Assessments:

% of grade	Activity	Assessment Method
15.00%	Quizzes	Students will complete quizzes through Canvas on a regular basis to assess understanding of quality assurance concepts, regulatory standards, and course material. Quizzes may include multiple-choice, short answer, and scenario-based questions aligned with CQIA-style assessments. Quizzes may be timed and utilize question banks to support academic integrity. Instructor feedback will be provided in a timely manner.
15.00%	Projects	Students will complete applied projects such as CAPA investigations, quality system analyses, and case-based problem-solving activities. Projects will require students to analyze quality issues, identify root causes, and propose corrective and preventive actions. Projects will be submitted through Canvas and evaluated based on accuracy, application of concepts, and alignment with industry standards.
15.00%	Homework	Students will complete homework assignments reinforcing course concepts, including problem-solving exercises, data analysis, and application of quality assurance tools. Assignments may include short written responses and applied exercises and will be submitted through Canvas. Instructor feedback will be provided in a timely manner.
30.00%	Exams	Students will complete exams through Canvas to assess understanding of quality assurance principles, regulatory frameworks, and application of course concepts. Exams may include multiple-choice, short answer, and scenario-based questions aligned with CQIA-style assessments. Exams may be timed and utilize question banks to support academic integrity.
15.00%	Written Assignments	Students will complete written assignments such as SOP critique or development, data integrity (GDP) analysis, and evaluation of quality systems. Assignments will assess students' ability to apply course concepts, communicate findings clearly, and align work with industry standards. Submissions will be completed through Canvas with instructor feedback provided.
10.00%	Participation	Students will be evaluated based on active participation in online discussions, attendance, case study analysis, and engagement with course activities. Participation includes contributing to discussion boards, responding to peers, and demonstrating engagement with course material. Evaluation will be based on quality and consistency of participation.

4. Instructor's Technical Qualifications:

The instructor will be proficient in using Canvas to manage course content, assignments, discussions, and grading. The instructor will create and deliver lectures and utilize multimedia instructional materials. The instructor will have completed or be willing to complete distance education training. Technical support is available through the college.

5. Student Support Services:

Students will have access to support services including tutoring, counseling, library resources, financial aid, and technical support. Links to these services will be provided in Canvas. Students will also have access to online databases, research tools, and writing support services.

6. Accessibility Requirements:
The course will meet accessibility standards in compliance with Section 508. Instructional materials will include accessible documents, structured content, descriptive alternative text, and captioned videos. Content will ensure readability and appropriate contrast. The course will support students with disabilities through accessible design and coordination with campus services.

7. Representative Online Lesson or Activity:
Students will complete a module on deviation and CAPA (Corrective and Preventive Action). The lesson will include a recorded lecture, assigned readings, and a case study involving a quality deviation scenario. Students will analyze the issue, identify root causes, and propose corrective actions in a written assignment. Students will also participate in a discussion board to evaluate peer responses. A quiz will assess understanding of key concepts.

Substantial Change:
DANCE 55A, Dance Performance - Modern

Units:	4.00
Total Instructional Hours (usually 18 per unit):	234.00
Hours per week (full semester equivalent) in Lecture:	0.00
In-Class Lab:	9.00
Arranged:	4.00
Outside-of-Class Hours:	0.00
Transferability:	Transfers to UC, CSU
Degree Applicability:	Credit - Degree Applicable
Advisory(s):	DANCE 10, 11, 12, 13, 14, 15, 16, 17, 18, 19A, 20, 21A, 21B, 22A, 22B, 24, 24B, 25, 25B, 26A, 26B, 31A, 31B, 32A, 32B, 33A, 33B, 34A, 34B, 41A, 41B, 42A, 42B, 43A, 43B, 44A or 44B

I. **Catalog Description**

This course offers performance experience and is organized as a contemporary modern dance company with fully produced concerts and dance productions in various settings. Students may participate as dancers and/or choreographers and explore artistic expression through learning original choreography and repertory from faculty, guest, and student choreographers. A diverse range of styles are presented including traditional modern, contemporary, postmodern, contemporary ballet, jazz, hip-hop, performance art, and mixed media. Students may participate in outreach by performing at community events, campus wide activities, and conferences such as the American College Dance Association. This performance class is by audition and intended for Dance majors, dancers with prior experience, and those seeking dance performance experience.

II. **Examples of Appropriate Text or Other Required Reading:**

(include all publication dates; for transferable courses at least one text should have been published within the last 7 years)

1. Dance (Whitechapel: Documents of Contemporary Art), Lepecki, A. (Editor), Whitecahpel Gallery and the MIT Press © 2012
2. Contemporary Dance Choreography and Spectatorship: Embodied Emotion, Lucía Piquero Álvarez, Palgrave Macmillan © 2024
3. Contemporary Choreography: A Critical Reader, 3rd, Butterworth, Jo, and Vicky Hunter, Routledge © 2026

III. **Course Objectives**

Upon completion of this course, the student will be able to:

1. Describe, analyze and critique a range of dance aesthetics and choreographic forms.
2. Perform a range of diverse dance styles and artistic qualities as required of various roles and choreography.
3. Implement professionalism and self discipline through adherence to rehearsal protocol, schedule and commitments, and through respect to ensemble and production crew.
4. Demonstrate the ability to work collaboratively within an ensemble, valuing diversity and fostering an environment of inclusion and mutual respect while contributing as both performer and/or creator to the production.
5. Participate in creative processes with a variety of choreographers, embracing diverse styles, perspectives, and approaches in the development of modern and contemporary repertory.
6. Demonstrate an ability to collaborate with designers, composers, and technicians while applying appropriate technical vocabulary and meeting project deadlines.
7. Demonstrate self confidence, poise, and range as a performing artist.
8. Demonstrate respect for rehearsal process and performance protocols.
9. Implement knowledge and skills of spacing, stage dimensions, wings, and other theatrical elements to mount a dance piece.
10. Apply theatrical stage make-up appropriate to specific role, character, costume, and style of a dance.

IIIb. **Arranged Hours Objectives:**

Upon completion of this course, the student will be able to:

1. Apply professional communication and teamwork strategies with ensemble members and production personnel during technical rehearsals, dress rehearsals, and performances across diverse venues and settings.

2. Develop and present dance performances across diverse venues and settings, including campus events, community events, high school recruitment events, and American College Dance Association conferences.
3. Apply professional communication and teamwork skills with ensemble members and production personnel during technical rehearsals, dress rehearsals, and performances across diverse venues and settings.

IV. **Methods of Presentation:**
Observation and Demonstration, Field Trips, Lecture and Discussion, Other Methods: Guided individual and group experiences, presentation of audio and visual examples of elements of dance production and performance, performance of class assignments, Student papers, observations, discussion, feedback, use of video recording and feedback, field trips to on and off campus performance venues.

IVb. **Arranged Hours Instructional Activities:**
Field Experience, Projects, Other Methods: Students will be performing at many different venues (outside of the theater) including campus events, community events, middle/high school recruitment events, and the American College Dance Association.

V. **Course Content**

% of Course	Topic
10.000%	Rehearsal protocol in a professional environment
10.000%	Exploring movement quality and artistic expression through diverse roles and repertory in a contemporary modern dance company
10.000%	Discussion of the relationship of music, costume, lighting, sets, props, and make-up to contemporary dance and choreographic expression
25.000%	Examination of various choreographic forms, structures, and stylistic differences within a contemporary modern dance company
10.000%	Discussion of responsibilities related to schedules, commitments, and professional conduct toward oneself, the ensemble, and the overall production
10.000%	Discussion of specific protocols and terminology related to modern dance performance and production preparation: a. Audition and casting procedures b. Studio rehearsal protocols and practices c. Costume design, construction, fittings, and maintenance d. Music selection, recording, and rehearsal integration e. Stage rehearsals, including spacing, lighting, technical, and dress rehearsals f. Previews, performances, and post-production meetings g. Community outreach and participation in professional conferences
15.000%	Collaboration with designers, composers, and technicians using appropriate professional terminology and adhering to established production schedules and timelines within a modern dance company
10.000%	Examination of contemporary modern dance choreographic styles influenced by the social, political, and cultural contexts of specific historical periods
100.000%	Total

Vb. **Lab Content**

% of Course	Topic
100.00%	All course content is lab content.

100.00%	Total

VI. **Methods of Evaluation**

% of Course	Topic
40%	Class Participation: Participate in all scheduled auditions, rehearsals, meetings, photo/video sessions, performances, local school performances, outreach activities.
20%	Final exam
20%	Projects: Includes class assignments, projects, conferences, and community outreach.
20%	Written assignments: Global Motion Dance Concert Report
100%	Total

VII. **Sample Assignments:**

Essay: Write a self-evaluation essay reflecting on experiences as a performer and choreographer. Evaluate collaboration with guest artists and peers throughout the rehearsal and performance processes and analyze how these experiences contributed to artistic growth and development.

Dance Critique: Attend Santa Monica College's Global Motion dance production and write a dance concert critique. Analyze the relationship between choreography and music, evaluate how costumes and lighting enhance artistic expression, and critically examine the dance styles and choreographic approaches presented. Include personal interpretations and reflections on the overall artistic experience.

VIII. **Student Learning Outcomes:**

1. Plan, oversee, and lead rehearsals for original choreography.
2. Execute performances at various locations including in a theater, at campus events, community events, high school recruitment events, on screen, and at the American College Dance Association.
3. Apply professional collaboration practices during rehearsals and performances with ensemble members, directors, and technical personnel.

Advisory Checklist and Worksheet: DANCE 55A

Proposed Advisory: Dance 10, 11, 12, 13, 14, 15, 16, 17, 18, 19A, 20, 21A, 21B, 22A, 22B, 24, 24B, 25, 25B, 26A, 26B, 31A, 31B, 32A, 32B, 33A, 33B, 34A, 34B, 41A, 41B, 42A, 42B, 43A, 43B, 44A or 44B

SECTION 1 - CONTENT REVIEW:

Criterion	N/A	Yes	No
1. Faculty with appropriate expertise have been involved in the determination of the advisory.		x	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.		x	
3. Selection of this advisory is based on tests, the type and number of examinations, and grading criteria.		x	
4. Selection of this advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.		x	
5. The body of knowledge and/or skills which are recommended for success before enrollment have been specified in writing (see below).		x	
6. The course materials presented in this advisory have been reviewed and determined to teach knowledge or skills recommended for success in the course requiring this advisory.		x	
7. The body of knowledge and/or skills recommended for success in this course have been matched with the knowledge and skills developed by the advisory course.		x	
8. The body of knowledge and/or skills taught in the advisor are not an instructional unit of this course.		x	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.		x	

ENTRANCE SKILLS RECOMMENDED FOR SUCCESS IN: 55A

(It is recommended that the student to be able to do or understand the following BEFORE entering the course)

A)	Apply foundational principles of body alignment, coordination, balance, and safe movement when learning choreography.
B)	Respond to musical and choreographic cues and recognize the aesthetic qualities of various dance forms.
C)	Recognize how costumes, lighting, sets, props, and makeup contribute to artistic expression in dance performance.
D)	Use space, direction, levels, energy, and dynamics to express choreographic intent.
E)	Demonstrate foundational expressive skills through focus, energy, and movement qualities appropriate to the dance style.
F)	Observe movement and apply instructor feedback to refine technical execution and artistic expression.
G)	Work collaboratively with others, demonstrating focus, preparation, and responsibility during rehearsals and meetings.

EXIT SKILLS (objectives) FROM: 55A

(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Perform a range of choreographic works with proper body alignment, coordination, balance, and control appropriate to each dance form.
2.	Demonstrate musicality and responsiveness to various forms of choreographic works and analyze a range of dance aesthetics and choreographic forms.
3.	Explain the process of designing costume, lighting, props, and make-up as it relates to dance expression and performance in a modern dance company
4.	Perform a range of qualities and technical styles as required of various roles and choreography.
5.	Illustrate choreographic intent through expression, focus, energy, and stylistically appropriate movement qualities in each piece.
6.	Collaborate with various choreographers, work with diverse styles and approaches to developing modern contemporary dance repertory.
7.	Cultivate professionalism and self-discipline through adherence to rehearsal protocol, schedule and commitments, and through respect to ensemble and production crews.

	ENTRANCE SKILLS FOR: 55A								
EXIT SKILLS From: 55A		A	B	C	D	E	F	G	H
	1	x							
	2		x						
	3			x					
	4				x				
	5					x			
	6						x		
	7							x	
	8								

Substantial Change:
DANCE 57A, World Dance Performance

Units:	4.00
Total Instructional Hours (usually 18 per unit):	234.00
Hours per week (full semester equivalent) in Lecture:	0.00
In-Class Lab:	9.00
Arranged:	4.00
Outside-of-Class Hours:	0.00
Transferability:	Transfers to UC, CSU
Degree Applicability:	Credit - Degree Applicable
Advisory(s):	DANCE 10, 11, 12, 13, 14, 15, 16, 17, 18, 19A, 20, 21A, 21B, 22A, 22B, 24, 24B, 25, 25B, 26A, 26B, 31A, 31B, 32A, 32B, 33A, 33B, 34A, 34B, 41A, 41B, 42A, 42B, 43A, 43B, 44A or 44B

I. **Catalog Description**

This course provides performance experience in a world dance company, emphasizing cultural identity, artistic expression, cultural preservation, and global citizenship through the study and performance of diverse dance traditions. Students audition as dancers and choreographers, rehearse, and perform a variety of world dance styles, including African, Mexican Folklórico, Asian, European, American, jazz, tap, Middle Eastern, and Latin dance forms. Working collaboratively with faculty and professional guest choreographers and peers, students develop their performance and choreographic skills while participating in community outreach at local schools, campus events, and professional conferences, including the American College Dance Association. Students also gain hands-on experience in all stages of dance production, from studio rehearsals to theatrical performances, integrating lighting, costumes, scenery, props, and makeup to support artistic vision and cultural representation. This performance course is intended for dance majors, experienced dancers, and students seeking to develop their dance performance skills.

II. **Examples of Appropriate Text or Other Required Reading:**

(include all publication dates; for transferable courses at least one text should have been published within the last 7 years)

1. Dancing in the World: Revealing Cultural Confluences (Routledge Series in Equity, Diversity, and Inclusion in Theatre and Performance), Sinclair Ogaga Emoghene and Kathleen A. Spanos, Routledge © 2023, ISBN: 978-1000927009
2. Dance Production: Design and Technology, Second Edition, Jeromy Hopgood, Routledge / Taylor & Francis Group © 2024, ISBN: 978-1032272078

III. **Course Objectives**

Upon completion of this course, the student will be able to:

1. Analyze world dance forms, aesthetics, and choreography within their historical, cultural, social, and political contexts.
2. Apply stylistically appropriate techniques and movement qualities in rehearsals and performances of world dance.
3. Implement dance production procedures from auditions and casting through rehearsals, performances, and post-production evaluation.
4. Develop collaborative rehearsal and production strategies with choreographers, ensemble members, designers, composers, and technicians.
5. Apply costume, lighting, set, and prop elements to support cultural expression and choreographic intent in dance performance.
6. Apply stage makeup techniques appropriate to the role, costume, and dance style.
7. Integrate spacing, formations, entrances, exits, and technical elements into a staged dance work.
8. Evaluate personal professionalism and ensemble collaboration based on preparation, attendance, rehearsal protocols, and production commitments.
9. Create publicity materials and compare strategies for press relations, fundraising, ticket sales, and audience engagement.
10. Develop community outreach performances that educate audiences about world dance traditions and their cultural significance.

IIIb. **Arranged Hours Objectives:**

Upon completion of this course, the student will be able to:

1. Apply professional communication and teamwork strategies with ensemble members and production personnel during technical rehearsals, dress rehearsals, and performances across diverse venues and settings.
2. Develop and present dance performances across diverse venues and settings, including campus events, community events, high school recruitment events, and American College Dance Association conferences.
3. Apply professional communication and teamwork skills with ensemble members and production personnel during technical rehearsals, dress rehearsals, and performances across diverse venues and settings.

IV. **Methods of Presentation:**
Observation and Demonstration, Other, Other (Specify), Field Trips, Lecture and Discussion
Other Methods: Guided individual and group experiences, presentation of audio and visual examples of elements of dance production and performance, performance of class assignments, Student papers, observations, discussion, feedback, use of video recording and feedback, field trips to on and off campus performance venues.

IVb. **Arranged Hours Instructional Activities:**
Field Experience, Projects, Other
Other Methods: Students will be performing at many different venues (outside of the theater) including campus events, community events, middle/high school recruitment events, and the American College Dance Association.

V. **Course Content**

% of Course	Topic
10.000%	Rehearsal protocol in a professional environment
10.000%	Movement quality in dance expression in different roles and repertory works in a world dance company
10.000%	Historical, cultural, and political contexts of the world dance forms studied. Music, costumes, lighting, sets, props, and makeup contributions to artistic expression and cultural significance.
20.000%	Various choreographic form, structure and stylistic differences and analyze how these differences impact cultural identity
10.000%	Discussion of responsibility to schedules and commitments, and develop a sense of professionalism to self, ensemble, and production
10.000%	Specific protocol and terminology regarding performance and preparation: • Audition and casting • Studio rehearsals • Costume design, construction, fitting, care • Music selection, recording, rehearsals • Stage rehearsals including spacing, lighting, tech and dress • Previews, performances, and post production meetings • Community outreach and conference attendance
15.000%	Various movement/choreographic styles that are influenced by social, political and cultural contexts of a given period
15.000%	Collaboration with different designers, composers, and technicians, using appropriate terminology and time frames
100.000%	Total

Vb. **Lab Content**

% of Course	Topic

100.00%	All course content is lab content
100.00%	Total

VI. **Methods of Evaluation**

% of Course	**Topic**
40%	Class Participation: Participate in all scheduled auditions, rehearsals, meetings, photo/video sessions, performances.
20%	Final exam
20%	Projects: Includes class assignments, projects, conferences, and community outreach.
20%	Written assignments: Synapse dance concert report
100%	Total

VII. **Sample Assignments:**
Essay: Write a self-evaluation essay reflecting on experiences as a performer and choreographer. Examine collaboration with guest artists and peers during rehearsals and performances, evaluate artistic and professional development, and discuss how these experiences influenced personal growth and artistic perspective.
Dance Critique: Attend Synapse Contemporary Dance Theater, a Santa Monica College Dance Department production, and write a concert report analyzing the performance. Examine the relationship between choreography and music, the use of costumes and lighting, and the movement characteristics of the dance styles presented. Critically analyze the choreographic and theatrical elements, and include personal interpretations and reflections on the concert.

VIII. **Student Learning Outcomes:**
1. Develop and implement a dance production plan encompassing auditions, rehearsals, performance protocols, technical elements, and post-production evaluation.
2. Collaborate with diverse choreographers and ensemble members to rehearse, create, and perform world dance works for live audiences.
3. Differentiate world dance forms within their historical and cultural contexts and perform traditional and contemporary styles with cultural respect and artistic integrity.

Advisory Checklist and Worksheet: DANCE 57A

Proposed Advisory: Dance 10, 11, 12, 13, 14, 15, 16, 17, 18, 19A, 20, 21A, 21B, 22A, 22B, 24, 24B, 25, 25B, 26A, 26B, 31A, 31B, 32A, 32B, 33A, 33B, 34A, 34B, 41A, 41B, 42A, 42B, 43A, 43B, 44A or 44B

SECTION 1 - CONTENT REVIEW:

Criterion	N/A	Yes	No
1. Faculty with appropriate expertise have been involved in the determination of the advisory.		**x**	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.		**x**	
3. Selection of this advisory is based on tests, the type and number of examinations, and grading criteria.		**x**	
4. Selection of this advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.		**x**	
5. The body of knowledge and/or skills which are recommended for success before enrollment have been specified in writing (see below).		**x**	
6. The course materials presented in this advisory have been reviewed and determined to teach knowledge or skills recommended for success in the course requiring this advisory.		**x**	
7. The body of knowledge and/or skills recommended for success in this course have been matched with the knowledge and skills developed by the advisory course.		**x**	
8. The body of knowledge and/or skills taught in the advisor are not an instructional unit of this course.		**x**	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.		**x**	

ENTRANCE SKILLS RECOMMENDED FOR SUCCESS IN: 57A

(It is recommended that the student to be able to do or understand the following BEFORE entering the course)

A)	Apply foundational principles of body alignment, coordination, balance, and safe movement when learning choreography.
B)	Respond to musical and choreographic cues and recognize the aesthetic qualities of various dance forms.
C)	Recognize how costumes, lighting, sets, props, and makeup contribute to artistic expression in dance performance.
D)	Use space, direction, levels, energy, and dynamics to express choreographic intent.
E)	Demonstrate foundational expressive skills through focus, energy, and movement qualities appropriate to the dance style.
F)	Observe movement and apply instructor feedback to refine technical execution and artistic expression.
G)	Work collaboratively with others, demonstrating focus, preparation, and responsibility during rehearsals and meetings.

EXIT SKILLS (objectives) FROM: 57A

(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Perform a range of choreographic works with proper body alignment, coordination, balance, and control appropriate to each dance form.
2.	Demonstrate musicality and responsiveness to various forms of choreographic works and analyze a range of dance aesthetics and choreographic forms.
3.	Explain the process of designing costume, lighting, props, and make-up as it relates to dance expression and performance in a modern dance company
4.	Perform a range of qualities and technical styles as required of various roles and choreography.
5.	Illustrate choreographic intent through expression, focus, energy, and stylistically appropriate movement qualities in each piece.
6.	Collaborate with various choreographers, work with diverse styles and approaches to developing modern contemporary dance repertory.
7.	Cultivate professionalism and self-discipline through adherence to rehearsal protocol, schedule and commitments, and through respect to ensemble and production crews.

	ENTRANCE SKILLS FOR: 57A								
EXIT SKILLS From: 57A		A	B	C	D	E	F	G	H
	1	x							
	2		x						
	3			x					
	4				x				
	5					x			
	6						x		
	7							x	
	8								

Substantial Change:
FILM STUDIES 1, Introduction To Cinema

Units:	3.00
Total Instructional Hours (usually 18 per unit):	72.00
Hours per week (full semester equivalent) in Lecture:	2.50
In-Class Lab:	1.50
Arranged:	0.00
Outside-of-Class Hours:	90.00
Transferability:	Transfers to UC, CSU
Cal-GETC Area:	3A: Arts
SMC GE Area:	3: Arts and Humanities
Degree Applicability:	Credit – Degree Applicable

I. **Catalog Description**

This course introduces students to the aesthetic or formal properties of cinema, including narrative, performance, mise-en-scène, cinematography, editing, and sound. Students then examine genre filmmaking and different modes of cinematic representation, including animated and avant-garde cinema, as well as works in documentary and nonfiction.

II. **Examples of Appropriate Text or Other Required Reading:**

(include all publication dates; for transferable courses at least one text should have been published within the last 7 years)

1. Understanding Movies, 11th, Louis Gianetti, , Prentice Hall © 2007
2. Movies and Meaning: An Introduction, 4th, Stephen Prince, Allyn & Bacon © 2006
3. Elements of Film, , 3rd, Lee R. Bobker, , Harcourt Brace Jovanovich © 1979
4. Film: An Introduction, John L. Fell, , Praeger © 1975
5. Anatomy of Film, 4th, Bernard F. Dick, , Bedford/St. Martin's © 2002
6. Film As Art, , Rudoph Arnheim, , University of California Press © 1957
7. The Major Film Theories, , Andrew J. Dudley, Oxford University Press, © 1976
8. The Film Encyclopedia, 3rd, Ephraim Katz, Harper © 1998
9. The Filmgoer's Companion, Leslie Halliwell, Hill & Wang © 1974
10. A Dictionary of the Cinema, Peter Graham, A.S. Barnes © 1968
11. Film Art: An Introduction, 13th, David Bordwell, Kristin Thompson & Jeff Smith, McGraw-Hill © 2023
12. Understanding Movies, 14th, Louis Gianetti, Pearson © 2017
13. Looking at Movies: An Introduction to Film, 6th, Dave Monahan and Richard Barsam, W.W. Norton & Co. © 2021

III. **Course Objectives**

Upon completion of this course, the student will be able to:

1. Identify the aesthetic elements of film, including narrative, narration, performance, mise-en-scène, cinematography, editing, and sound, as well as the components of a film industry, including production, distribution, and exhibition.
2. Identify the attributes of a film genre and explain the complex relationships between genre, industry, and audiences.
3. Distinguish live-action narrative cinema in detail from other cinematic modes of representation, including documentary, avant-garde, and animated cinema.
4. Apply the basic vocabulary of film aesthetics, genre, and different modes of representation with clarity in both written and verbal forms.

IV. **Methods of Presentation:**

Discussion, Distance Education, Lecture and Discussion, Other Methods: Lectures using images, slides, clips, and other aids to illustrate the major ideas and techniques. Screenings, using films from different eras, genres, and filmmakers to illustrate key concepts. Small group discussions encourage students to analyze films and share their perspectives.

V. **Course Content**

% of Course	Topic

8.000%	Origins: The origins of the motion picture, its development as a mass medium, the elements of the film industry, and the relationship between cinema and older forms of art are discussed.
8.000%	Narrative: Narrative and narration are the core elements of a story, how cinematic narratives can be organized or structured, and how stories are conveyed to audiences to produce specific responses at key moments. These are the key elements expected in a script for a movie.
8.000%	Performance: The importance of actors in motion pictures, different kinds of actors for different roles, approaches to performance including method acting and others, and criteria for evaluating performance in a motion picture.
8.000%	Mise-en-scène: The elements on the 'stage' including sets, décor, props, lighting, costumes, make-up, hair, lighting, and color. The role of mise-en-scène in developing and manipulating screen space, depth values, and communicating meaning in a movie.
8.000%	Cinematography: Celluloid and digital processes, and general principles of photography, including lenses and their effects, angles, mounting devices, camera movement, framing, composition, and the role of cinematography in the narration of a film.
8.000%	Editing: The concept of connecting shots in both practical and expressive ways, types of shot transitions, elliptical editing, the notion of 'Continuity Editing,' and alternate approaches like those presented in early Soviet cinema or the French New Wave.
8.000%	Sound: Elements of a soundtrack, relationships between sounds or between sound and image, the concept of synchronization, the importance of silence in a motion picture, sound and the concept of 'diegesis,' and evaluating sound in a motion picture.
28.000%	Genre: Defining cinematic genres; the economic, aesthetic, and cultural reasons for genre filmmaking; and the notion of genre as static and dynamic. At least one genre should be explored in detail and examined over multiple weeks to illustrate changes in technology, in the audience, and issues like censorship and control of movie theaters.
8.000%	Alternate Modes of Cinematic Representation I: the concepts of 'realism' and 'formalism' and an exploration of documentary and non-fiction cinema as examples of 'realism.'
8.000%	Alternate Modes of Cinematic Representation II: the concepts of 'realism' and 'formalism' and an exploration of avant-garde and animated cinema as examples of 'formalism.'
100.000%	Total

Lab Content

% of Course	Topic
100%	Screening films
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
25%	Written assignments: Film Analysis Essays
25%	Research Projects
25%	Exams/Tests: Weekly quizzes and two exams
25%	Class Participation: In-class activities

100%	Total

VII. **Sample Assignments:**

Mise-en-scène Presentation: Using a still image provided by the instructor, describe in detail the various elements of mise-en-scène used, including a detailed description of the lighting in the shot in terms of the types, directions, and overall effects. Description will be foregrounded over evaluation or interpretation to build the skill of seeing, identifying elements, and using appropriate language to communicate the contents of the image.
Exploring a Cinematic Genre: 1. Form a group of four. 2. Choose one cinematic genre (e.g., horror, romantic comedy, film noir, etc.). 3. Research the core characteristics of your chosen genre using multiple high-quality academic sources (books, scholarly articles, or credible film studies websites). 4. Create a group presentation that includes the following: a) A clear explanation of the fundamental elements defining the genre (themes, visual style, narrative structure, character types, etc.). b) An analysis of one film that experiments with or challenges the traditional elements of the genre. c) Discuss how the chosen film shows both the static (unchanging or consistent) and dynamic (evolving or innovative) aspects of the genre. 5. Be sure to cite your sources and be prepared to answer questions from the class about your findings.

VIII. **Student Learning Outcomes:**

1. Describe the roles of multiple aesthetic elements of film, including narrative, performance, mise-en-scène, cinematography, editing, and sound, and how each can contribute to the cinematic experience.
2. Explain the importance of genre in filmmaking, including the economic, aesthetic, and cultural reasons for genre filmmaking, and how genres both endure and change over time.

Substantial Change:
FILM STUDIES 5, Film and Society

Units:	3.00
Total Instructional Hours (usually 18 per unit):	72.00
Hours per week (full semester equivalent) in Lecture:	2.50
In-Class Lab:	1.50
Arranged:	0.00
Outside-of-Class Hours:	90.00
Transferability:	Transfers to UC, CSU
Cal-GETC Area:	3B: Humanities
SMC GE Area:	3: Arts and Humanities
Degree Applicability:	Credit – Degree Applicable

I. **Catalog Description**

This course examines cinema as a reflection of and influence on American society. Films are situated within the political, cultural, and economic contexts of their times, and are analyzed as records of the industrial practices, thematic trends, and social attitudes of the past that help to shape the present.

II. **Examples of Appropriate Text or Other Required Reading:**

(include all publication dates; for transferable courses at least one text should have been published within the last 7 years)

1. Searching for New Frontiers: Hollywood Films in the 1960s, Rick Worland, Wiley-Blackwell © 2018
2. American Cinema of the 2010s: Themes and Variations, Dennis Bingham, ed., Rutgers University Press © 2021
3. The Future Was Now: Madmen, Mavericks, and the Epic Sci-Fi Summer of 1982, Chris Nashawaty, Flatiron Books © 2024
4. The Films of the Sixties, Peter Biskind, , Virgin Publishing © 1993
5. We'll Always Have the Movies: American Cinema During World War II, Robert L. McLaughlin and Sally E. Parry, University Press of Kentucky © 2006

III. **Course Objectives**

Upon completion of this course, the student will be able to:

1. Identify the major events of a particular decade or time period in American society.
2. Describe the social and political values that characterized American society in that era or span of time.
3. Explain the industrial priorities, technological developments, and audience habits that are particular to the film industry in the period in question.
4. Identify the key or recurring trends, thematic concerns, and genres of that period in American cinema.
5. Assess the complex relationships between the films of the era and the social, political, and cultural trends of American society during that period.

IV. **Methods of Presentation:**

Discussion, Lecture and Discussion, Other Methods: Screening of films

V. **Course Content**

% of Course	Topic
25.000%	Examination of the key historical events, economic determinants, political discourses, and social forces that characterized the period under examination.
25.000%	Examination of the state of cinema during the period in question, including economic incentives, ownership issues, technological changes, and audience habits.
25.000%	Examination of the genres, cycles, trends, and thematic concerns that characterized the span of time under consideration.
25.000%	The end of the period under study, and how emerging issues in both society and cinema set the stage for the period to follow.

100.000%	Total

Lab Content

% of Course	Topic
100%	Viewing films and other exercises that reinforce the lecture.
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
25%	Class Participation: In-class activities
25%	Exams/Tests: Objective exams
25%	Papers
25%	Oral Presentation
100%	Total

VII. **Sample Assignments:**

Group Presentation: In a small group, students will read an article the examines the cultural, economic, and political context of a given year, and that situates key cinematic texts in that same year. Together they develop a presentation that explains the article using their own words. They will also develop an open-ended question for the author about their argument for the instructor to address, and a second open-ended question about the key arguments for the rest of the class to address.

Essay: Using high-quality academic resources, a student will research a cycle of films or cinematic trend that is particular to the period of time covered in the course. In an analytical essay, they will use their research to examine 2 particular films in that cycle, and how each either helped to bring that cycle to life, alter its trajectory, or bring it to a close.

VIII. **Student Learning Outcomes:**

1. Analyze key films in terms of their capacity to reflect and sometimes help to shape society and the film industry in a particular span of time.
2. Explain the issues in the film industry, from industrial practices to trends in genre, theme, and audience behavior that shaped the period in question.
3. Analyze the historical events, economic forces, and cultural debates that characterized the period covered by the course.

Substantial Change:
FILM STUDIES 6, Gender and Sexuality in Cinema

Units:	3.00
Total Instructional Hours (usually 18 per unit):	72.00
Hours per week (full semester equivalent) in Lecture:	2.50
In-Class Lab:	1.50
Arranged:	0.00
Outside-of-Class Hours:	90.00
Transferability:	Transfers to UC, CSU
Cal-GETC Area:	3A: Arts, 3B: Humanities
SMC GE Area:	3: Arts and Humanities
Degree Applicability:	Credit – Degree Applicable

I. **Catalog Description**

This course examines the construction and representation of gender and sexuality in cinema both in the U.S. and internationally, including majority as well minority groups. Students will analyze films to understand how the concepts of gender and sexuality have been imagined, complicated, and challenged cinematically. Issues of access—who does and does not get to produce, distribute, and exhibit cinema—will also be examined. While gender and sexuality are in the foreground, issues like age, race, ethnicity, nationality, and ableism will also be considered.

II. **Examples of Appropriate Text or Other Required Reading:**

(include all publication dates; for transferable courses at least one text should have been published within the last 7 years)

1. Working Girls: Gender and Sexuality in Popular Cinema, Yvonne Tasker, Routledge Press © 1998
2. Post-Backlash Feminism: Women and the Media Since Reagan-Bush, Kellie Bean, - © 2007
3. Gender, Race and Class in Media, Gail Dines and Jean M Humez, eds, , - © 2003
4. Women and Media: Content, Careers and Criticism, Cynthi Lont, - © 2005
5. America on Film: Representing Race, Class, Gender, and Sexuality at the Movies, 3rd, Harry Benshoff and Sean Griffin, Wiley-Blackwell © 2021
6. Multiple Voices in Feminist Film Criticism, Carson, Diane, Linda Dittmar, and Janice R. Welsch, eds, University of Minnesota Press © 1994
7. Issues in Feminist Film Criticism. , Erens, Patricia, ed, University of Indiana Press © 1990
8. Beyond Binaries: Sex, Sexualities, and Gender in the Lusophone World, Paulo Pepe and Ana Raquel Fernandes, eds., Peter Lang Ltd, International Academic Publishers © 2021
9. Film Bodies: Queer Feminist Encounters with Gender and Sexuality in Cinema, Katharina Lindner, I.B. Tauris © 2017
10. Cinemas of Boyhood: Masculinity, Sexuality, Nationality, Timothy Shary, Berghahn Books © 2021
11. Screening the Male: Exploring Masculinities in Hollywood Cinema, Steve Cohan and Ina Rae Hark, eds., Routledge © 2016

III. **Course Objectives**

Upon completion of this course, the student will be able to:

1. Explain the concepts of gender and sexuality as they have been defined historically and as they have been challenged and re-imagined in the contemporary context.
2. Identify the ways in which cinema has constructed, represented, reinforced, and challenged the concepts of gender and sexuality in different periods of time and in different contexts.
3. Explain the forces that have shifted understanding of the concepts of gender and sexuality, including colonialism, war, social movements, and industrial practices within film industries.
4. Analyze the ways in which gender and sexuality inform and are conflated with each other in cinema, and how issues like age, race, nationality, and ableism intersect with each of them.

IV. **Methods of Presentation:**

Discussion, Lecture and Discussion, Other Methods: Screening of Films

V. **Course Content**

% of Course	Topic

20.000%	**Intersectionality:** Issues like age, race, geography, colonialism, and ableism cannot be disentangled from gender and sexuality. In this portion of the class, one or more of these issues will gain the foreground along with gender and sexuality in order to deal with the cinematic construction of these concepts in more complete ways.
20.000%	**International Cinema:** An examination of how gender and sexuality are imagined, constructed, and contested in international cinemas both historically and in the contemporary period. Multiple case studies from different continents and language groups are used to illustrate these issues in those contexts, with an eye toward who does and does not have access to cinematic representation.
20.000%	**Queering Classical Hollywood**: Notions of gender and sexuality that challenge the centrality of 'straightness,' both within the 1940s, '50s, and '60s, and in readings of Classical Hollywood Cinema from the 1980s and 1990s. The recognition of ways that queer 'coding' of ostensibly straight characters allowed cinema to construct and communicate queer identities in the midst of the studio system and Production Code Administration.
20.000%	**The Studio System**: Gender and sexuality in the context of the economics of the studio system and the manufacturing of 'stars' as critical commodities in the film industry. The foregrounding of 'desire' as a way to drive ticket sales. The 'nymphet' as a central character type and the casting of adult women as young girls in American cinema.
20.000%	**Early Cinema**: The centrality of gender and sexuality in the early narrative cinema of Alice Guy-Blache. European notions of gender and sexuality within the confines of German, French, and American film industries. The transition to synchronized sound and the introduction of vocal sound to concepts of gender and sexuality.
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
25%	Class Participation: In-class Activities.
25%	Exams/Tests
25%	Oral Presentation
25%	Papers
100%	Total

VII. **Sample Assignments:**

Essay: Write an essay that compares and contrasts the representation of straight male characters in films of the 1960s, 1970s, and 1980s. How did the different male stars of those periods—from Sidney Poitier to Richard Benjamin to Sylvester Stallone—indicate changes to the notions of straight masculinity in Hollywood from period to period?

Group Presentation: Get into groups and research the New Queer Cinema movement of the 1990s, exploring the aesthetic and thematic concerns of the filmmakers associated with that collection of works. In a presentation before the class, contrast the work of lesbian women working in video, and gay men working on celluloid film in terms of financing, distribution, exhibition, and reception at film festivals in the 1990s.

VIII. **Student Learning Outcomes:**

1. Analyze cinematic representations of gender and sexuality, assessing the complex forces which shape both those concepts and cinema itself on a case-by-case basis.
2. Describe the shifting notions of gender and sexuality, and the role cinema has played in constructing, reinforcing, and challenging those notions in a variety of contexts.

Substantial Change:
FILM STUDIES 7, Race and Ethnicity in Cinema

Units:	3.00
Total Instructional Hours (usually 18 per unit):	72.00
Hours per week (full semester equivalent) in Lecture:	2.50
In-Class Lab:	1.50
Arranged:	0.00
Outside-of-Class Hours:	90.00
Transferability:	Transfers to UC, CSU
Cal-GETC Area:	3B: Humanities
SMC GE Area:	3: Arts and Humanities, 7: Global Citizenship
Degree Applicability:	Credit – Degree Applicable

I. **Catalog Description**

This course examines the construction and representation of race and ethnicity in cinema, both in the U.S. and internationally, including majority as well as minority groups. Students will analyze films to understand how the concepts of race and ethnicity have been imagined, complicated, and challenged cinematically. Issues of access—who does and does not get to produce, distribute, and exhibit cinema—will also be examined. While race and ethnicity are in the foreground, issues like nationality, gender, sexuality, age, and ableism will also be considered.

II. **Examples of Appropriate Text or Other Required Reading:**

(include all publication dates; for transferable courses at least one text should have been published within the last 7 years)

1. Hollywood's Hawaii: Race, Nation, and War, Delia Malia Caparoso Konzett, ed., Rutgers University Press © 2017
2. The Myth of Colorblindness: Race and Ethnicity in American Cinema, Sarah E. Turner and Sarah Nilsen, eds., - © 2019
3. Toward a Counternarrative Theology of Race and Whiteness: Studies in Philosophy of Race, Science Fiction Cinema, and Superhero Stories, Christopher M. Baker, Palgrave Macmmillan © 2022
4. America on Film: Representing Race, Class, Gender, and Sexuality at the Movies, 3rd, Harry Benshoff and Sean Griffin, Wiley-Blackwell © 2021
5. Tropical Multiculturalism: A Comparative History of Race in Brazilian Cinema and Culture, Robert Stam, Duke University Press © 1997

III. **Course Objectives**

Upon completion of this course, the student will be able to:

1. Explain the concepts of race and ethnicity as they have been defined historically and as they have been challenged and re-imagined in the contemporary context.
2. Identify the ways in which cinema has constructed, represented, reinforced, and challenged the concepts of race and ethnicity in different periods of time and in different contexts.
3. Explain the forces that have shifted understanding of the concepts of race and ethnicity, including colonialism, war, social movements, and industrial practices within film industries.
4. Analyze the ways in which race and ethnicity inform and are conflated with each other in cinema, and how issues like nationality, gender, sexuality, age, and ableism intersect with them.

IV. **Methods of Presentation:**

Discussion, Lecture and Discussion, Other (Specify), Distance Education
Other Methods: Screening of Films

V. **Course Content**

% of Course	Topic
12.000%	Intersectionality, or how issues like age, gender, sexuality, geography, colonialism, and ableism cannot be disentangled from race and ethnicity
28.000%	Race and ethnicity in international cinemas

12.000%	Whiteness in cinema, films made by and about those who identify as white
12.000%	Asian-Americans in cinema, films by and about those who identify as Asian-American
12.000%	African-Americans in cinema, films by and about those who identify as African-American
12.000%	Latine-Americans in cinema, films by and about those who identify as Latine
12.000%	The concepts of race and ethnicity and their construction and representation in cinema.
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
25%	Class Participation: In-class Activities
25%	Exams/Tests
25%	Oral Presentation
25%	Papers
100%	Total

VII. **Sample Assignments:**
Essay: Write an essay that compares and contrasts the representation of African-American characters in the films of the 1960s, 1970s, and 1980s. How did the different stars of those periods—from Sidney Poitier to Richard Pryor to Eddie Murphy—indicate changes to the notion of 'Blackness' in Hollywood from period to period?
Group Presentation: Get into groups and research the film 'Emilia Perez,' exploring the complications of a film that is set in Mexico, was made by a French production team, and that featured Dominican-American and Mexican-American women in key roles as Mexicans. How did this film at once indicate the racial and national diversity of Mexico, yet also trigger a tremendous backlash for not 'representing' Mexico in more careful, considerate ways?

VIII. **Student Learning Outcomes:**
1. Analyze cinematic representations of race and ethnicity, assessing the complex forces which shape both those concepts and cinema itself on a case-by-case basis.
2. Describe the shifting notions of race and ethnicity, and the role cinema has played in constructing, reinforcing, and challenging those notions in a variety of contexts.

Substantial Change:
FILM STUDIES 8, Popular Film Genres

Units:	3.00
Total Instructional Hours (usually 18 per unit):	72.00
Hours per week (full semester equivalent) in Lecture:	2.50
In-Class Lab:	1.50
Arranged:	0.00
Outside-of-Class Hours:	90.00
Transferability:	Transfers to UC, CSU
Cal-GETC Area:	3A: Arts
SMC GE Area:	3: Arts and Humanities
Degree Applicability:	Credit – Degree Applicable

I. **Catalog Description**

This course introduces students to the concept of genre—or 'category'—in cinema, exploring the economic, aesthetic, and cultural reasons for genre film making. Typically, it will focus on one genre and its development over time—like Romantic Comedy, Horror, or the Western—and why some genres endure while others fade away. The genre under examination may change each semester.

II. **Examples of Appropriate Text or Other Required Reading:**

(include all publication dates; for transferable courses at least one text should have been published within the last 7 years)

1. Film Genre: The Basics, 1st, Barry Keith Grant, Routledge © 2023
2. Resetting the Scene: Classical Hollywood Revisited, Phillippa Gates and Katherine Spring, eds., Wayne State University Press © 2021
3. The Comedy Studies Reader, Nick Marx and Matt Sienkiewicz, eds., University of Texas Press © 2018
4. Robin Wood on the Horror Film: Collected Essays and Reviews, Robin Wood, edited by Barry Keith Grant, Wayne State University Press © 2018

III. **Course Objectives**

Upon completion of this course, the student will be able to:

1. Explain the different ways cinematic genres can be defined.
2. Describe the economic, aesthetic, and cultural reasons for genre film making.
3. Identify and explain the core characteristics of the genre assigned for the semester.
4. Analyze how the genre has changed by comparing films from different periods.
5. Use genre as a way to explain the concerns of the society in which it is popular.

IV. **Methods of Presentation:**

Discussion, Lecture and Discussion, Projects, Group Work, Other Methods: Screening of Films

V. **Course Content**

% of Course	Topic
20.000%	Examining the changes to this specific genre over time; the films that established the genre, the films that experimented with the genre, and the films that either revived it or seemed to mark its decline.
20.000%	Defining the specific genre under examination for the semester; the stories it tells, their key themes and conflicts, the various conventions of this genre, as well as its iconography.
20.000%	Genre as both static—a formula—and dynamic—subject to change. Types of experiments in genre film making and how each works.
20.000%	The economic, aesthetic, and cultural reasons for genre film making in a given society, the relationship between film industries and audiences and their mutual dependence on genre.
20.000%	The concept of genre and the different and often inconsistent ways that different genres can be defined, from popular, to consumer, to academic definitions.

100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
25%	Class Participation: In-class activities.
25%	Oral Presentation
25%	Exams/Tests
25%	Papers
100%	Total

VII. **Sample Assignments:**

Research Essay: Research the different ways cinematic genres are defined, from popular or colloquial approaches, to those used to guide consumer choices, to those used by academics and scholars of cinema. Choosing one genre in particular, write an essay that compares and contrasts the different definitions of the same genre in order to highlight the various priorities, concerns, and habits associated with each approach to its definition.

Group Presentation: In small groups, research the academic definition of a popular film genre other than the one the course is focused on. Explain the core elements of that genre, including its key themes and conflicts, as well as its conventions and iconography. Examine how a particular film experimented with that genre, and how this particular expression of the genre maintained some of the core elements while altering others.

VIII. **Student Learning Outcomes:**

1. Analyze popular film genres and distinguish the conventions, characteristics, and criteria used to define them.
2. Explain the economic, artistic, and cultural reasons for genre filmmaking.
3. Compare genre films over time to see how they indicate enduring or changing societal concerns.

Substantial Change:
FILM STUDIES 9, Film Artists

Units:	3.00
Total Instructional Hours (usually 18 per unit):	72.00
Hours per week (full semester equivalent) in Lecture:	2.50
In-Class Lab:	1.50
Arranged:	0.00
Outside-of-Class Hours:	90.00
Transferability:	Transfers to UC, CSU
SMC GE Area:	3: Arts and Humanities
Degree Applicability:	Credit – Degree Applicable
Advisory(s):	FILM 2

I. **Catalog Description**

This course examines the artistic, cultural, and economic contributions of a screenwriter, director, producer, star, or studio. By exploring their various works, we can understand the development of their style, their ideological or social concerns, as well as their standing in the film industry and beyond. Specific film artists will vary from semester to semester.

II. **Examples of Appropriate Text or Other Required Reading:**

(include all publication dates; for transferable courses at least one text should have been published within the last 7 years)

1. The Sensuous Cinema of Wong Kar-wai: Film Poetics, and the Aesthetic of Disturbance, Gary Bettinson, Hong Kong University Press © 2025
2. The Complete Kubrick, David Hughes, Virgin Books © 2001
3. Meryl Streep (Anatomy of an Actor), Karina Longworth, Phaidon Press © 2014
4. The Cinema of Stanley Kubrick, Norman Kagan, , Continuum Publishing © 2000
5. Stanley Kubrick: A Biography, Vincent Lobutto, , Da Capo Press, © 1999
6. Charles Burnett: A Cinema of Symbolic Knowledge, James Naremore, University of California Press © 2017
7. RKO Radio Pictures: A Titan is Born, Richard B. Jewell, University of California Press © 2012
8. Stanley Kubrick, Director: A Visual Analysis, Alexander Walker, W.W. Norton & Co © 2000

III. **Course Objectives**

Upon completion of this course, the student will be able to:

1. Identify the key films associated with the artist and their primary contribution to them.
2. Explain the themes the artist worked with routinely, or the diversity of thematic concerns they explored in their output.
3. Compare different works of the artist over time to identify the development of their craft, their creative power, or influence.
4. Assess the social, economic, and cultural significance of the artist and their work through analysis of their cinematic output.

IV. **Methods of Presentation:**

Discussion, Lecture and Discussion, Observation and Demonstration, Critique, Group Work, Online instructor-provided resources

V. **Course Content**

% of Course	Topic
25.000%	The legacy of the artist in terms of contributions to cinema or inspiration to newer generations of artists. How they are understood by critics both popular and academic.
25.000%	The arc of the artist's tenure in cinema, their relationship to the cinematic mainstream, whether they were at the center of it, outside of it, or moving dynamically within it. The thematic concerns or genres they were closely associated with.

25.000%	The emergence of the artist in the cinematic landscape. How they came to prominence, or established themselves as a creative or economic force in cinema.
25.000%	The artist in context; their role in cinema broadly and the economic, cultural, and creative constraints within which they work.
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
25%	Class Participation: In-class Activities.
25%	Exams/Tests
25%	Oral Presentation
25%	Papers
100%	Total

VII. **Sample Assignments:**

Essay: Write an essay that explores the recent rise of the studio/distributor A24. How did they start, and how did they develop a reputation for a certain style of movie, certain thematic concerns, types of performers, and audience engagement? Support your assessment of A24 with scholarly research from academic journals and film reviews from nationally recognized news publications. What film exemplifies the A24 approach in your opinion, and why?

Group Presentation: In small groups research the director, Todd Haynes, and the performer, Julianne Moore, to understand the creative work both have undertaken throughout their careers, both individually and working together. Examine three Haynes-Moore collaborations, including [Safe] (1995), Far From Heaven (2002), and May December (2023) and present in class. What does each film represent in the creative arc of each artist? What if anything do they seem to do together creatively that is different than what they do when working separately? Support your analysis with your accumulated research and clips from each film.

VIII. **Student Learning Outcomes:**

1. Identify the creative work of the artist whether they are an actor, director, writer, or corporation like a studio.
2. Compare the works of that artist and explain the themes, genres, and social concerns they seemed to work within and around consistently.
3. Assess the career achievements of the artist as measured in their films, recognition in popular and academic publications, and their standing in the film industry or society overall.

Substantial Change:
FILM STUDIES 11, Adaptation to Cinema

Units:	3.00
Total Instructional Hours (usually 18 per unit):	72.00
Hours per week (full semester equivalent) in Lecture:	2.50
In-Class Lab:	1.50
Arranged:	0.00
Outside-of-Class Hours:	90.00
Transferability:	Transfers to UC, CSU
Cal-GETC Area:	3B: Humanities
SMC GE Area:	3: Arts and Humanities
Degree Applicability:	Credit – Degree Applicable
Advisory(s):	ENGL C1000 (formerly ENGL 1)

I. **Catalog Description**

This course explores the process of transforming works from various sources—including literature, television, radio, video games, comic books, and historical events—into movies. Students will study various approaches to adapting source material into cinema, the expressive powers and limitations of the sources in question, and how to evaluate the adapted work in relation to its original format.

II. **Examples of Appropriate Text or Other Required Reading:**

(include all publication dates; for transferable courses at least one text should have been published within the last 7 years)

1. The Routledge Companion to Adaptation, Dennis Cutchins, Katja Krebs, and Eckart Voigts, eds., Routledge © 2020
2. New Approaches to Contemporary Adaptation, Betty Kaklamanidou, ed., Wayne State University Press © 2020
3. The Superhero Blockbuster: Adaptation, Style, and Meaning, James C. Taylor, University Press of Mississippi © 2025
4. Lights, Camera, Game Over!: How Video Game Movies Get Made, Luke Owen, Schiffer © 2017
5. For each film studied, the corresponding literary text will be required. Selections will vary by instructor.

III. **Course Objectives**

Upon completion of this course, the student will be able to:

1. Identify the structures, styles, and techniques associated with cinema as an aesthetic format.
2. Identify the structures, styles and techniques associated with non-cinematic forms of expression, like literature, television shows, podcasts, comic books, and video games.
3. Describe the challenges involved with identifying the aesthetic elements of non-cinematic works and translating them into cinema.
4. Critique the cinematic adaptation in contrast with its original version in terms of the ability of each to communicate and express ideas, narratives, themes, and experiences.

IV. **Methods of Presentation:**

Discussion, Lecture and Discussion, Other (Specify), Critique, Projects, Visiting Lecturers, Group Work, Online instructor-provided resources

Other Methods: Whole-group discussion Small-group discussion Screening of films and exerpts

V. **Course Content**

% of Course	Topic
16.667%	Television and other serialized forms, how they translate to a single cinematic text
16.667%	Comic books and graphic novels, the benefit they give in storyboarding for film, etc.
16.667%	Video and board games, how ‘playing’ and ‘winning’ can be adapted into film
16.667%	Non-Fiction works, lived experiences, documentaries, biographies, etc.

16.665%	Stage plays and other theatrical works
16.667%	Novels and other literary works
100.000%	Total

Lab Content

% of Course	Topic
100%	Screening films
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
25%	Class Participation In-class activities.
25%	Exams/Tests
25%	Oral Presentation
25%	Papers
100%	Total

VII. **Sample Assignments:**

Essay: Read several short stories and analyze the characteristics that distinguish short fiction from other literary forms. In an essay, explain these key characteristics and evaluate which elements could be adapted effectively for film, which may be more challenging to translate to the screen, and why.

Group Presentation: Collaborate with classmates to watch a film adapted from a familiar video game. Develop an in-class presentation comparing the game with its film adaptation, explaining which elements were retained, omitted, or significantly changed. Conclude by evaluating the film both as a standalone work and as an adaptation of the original video game.

VIII. **Student Learning Outcomes:**

1. Assess the effectiveness of an adapted work, both as a stand-alone movie, and as a representation of its source material.
2. Explain the challenges and opportunities involved in translating a work from its original medium into cinema.
3. Identify the aesthetic characteristics of the medium that is the source of the adaptation, and how they compare to those of cinema.

New Course:
SUSTAINABLE MATERIALS MANAGEMENT 6, Introduction to Climate & Sustainable Food Systems

Units:	1.00
Total Instructional Hours (usually 18 per unit):	18.00
Hours per week (full semester equivalent) in Lecture:	1.00
In-Class Lab:	0.00
Arranged:	0.00
Outside-of-Class Hours:	36.00
Transferability:	Transfers to CSU
SMC GE Area:	4: Social and Behavioral Sciences
Degree Applicability:	Credit – Degree Applicable

I. **Catalog Description**

This course examines the scientific foundations of climate change and direct connections to global and local food systems. Students explore Earth's climate system, greenhouse gas dynamics, and observed and projected climate impacts, with a particular focus on agriculture, land use, and food systems. The course integrates natural and social science perspectives to analyze how food production, distribution, and consumption contribute to climate change and how climate change, in turn, affects crops, livestock, fisheries, and food distribution. Emphasis is placed on sustainable and regenerative agricultural practices, climate-smart food policies, and equitable solutions that promote environmental resilience and human well-being.

II. **Examples of Appropriate Text or Other Required Reading:**

(include all publication dates; for transferable courses at least one text should have been published within the last 7 years)

1. Resilient Agriculture: Food Systems for a Changing Climate, Laura Lengnick, New Society Publishers © 2022, ISBN: 978-0865719507
2. Feeding the Earth: A Manifesto for Regenertive Agriculture, Daniel Baertschi, Editions la Butineuse © 2022, ISBN: 978-2493291035
3. Environment and Climate-smart Food Production, Charis Galanakis, ed., Springer © 2022, ISBN: 978-3030715700
4. Transforming Food Systems Under Climate Change through Innovation, Bruce Campbell, ed., Cambridge University Press © 2023, ISBN: 978-1009227209
5. Climate and Society: Transforming the Future, Robin Lechienko and Karen O'Brien, Polity © 2024, ISBN: 978-1509559282
6. Farm2People (https://www.farm2people.org/) states its mission is "to Secure Local Harvests & Fight Hunger in Greater Los Angeles." The group's Mission states 4 pillars: 1) ECONOMIC EMPOWERMENT FOR UNDERSERVED FARMERS 2) NUTRITIOUS FOOD ACCESS FOR HUNGRY PEOPLE IN LOS ANGELES 3) ENVIRONMENTAL HEALTH THROUGH REGENERATIVE FARMING METHODS 4) RESPECT AND DIGNITY ACROSS OUR LOCAL FOOD SUPPLY CHAIN

III. **Course Objectives**

Upon completion of this course, the student will be able to:

1. Compare conventional and sustainable agricultural practices, including regenerative agriculture, agroecology, urban agriculture, and climate-smart farming.
2. Evaluate the social, economic, and environmental dimensions of food justice, environmental justice, and equitable access to healthy food.
3. Explain the core principles of climate science and the evidence for human-driven climate change.
4. Compare the structure and components of local, regional, and global food systems.
5. Analyze the impacts of consumer food choices, dietary patterns, and food waste on climate change and environmental sustainability.

IV. **Methods of Presentation:**

Distance Education, Field Experience, Lecture and Discussion, Observation and Demonstration, Discussion, Critique, Projects, Field Trips, Visiting Lecturers, Individualized Instruction, Group Work, Online instructor-provided resources

V. **Course Content**

% of Course	Topic
12.500%	Introduction to Climate Science and Food Systems
12.500%	The Science of Climate Change
12.500%	Climate Change Impacts on Food Production
12.500%	Agriculture as a Driver of Climate Change
12.500%	Climate Adaptation in Food Systems
12.500%	Sustainable and Regenerative Food Systems
12.500%	Mitigation, Policy, and Equity
12.500%	Future Food Systems and Solutions
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
10%	Class Participation: In-class activities
20%	Written assignments
20%	Other: Discussions
25%	Other Assessments: Readings, research activities, case study analysis, applied projects, and other activities designed to reinforce course concepts and assess student learning
25%	Final Project
100%	Total

VII. **Sample Assignments:**

"Trace Your Meal" – Food System Mapping: Choose one meal you ate this week and create a food system map showing: • Major ingredients • Where ingredients originated • Transportation involved • Calculation of the greenhouse gasses produced in transportation • Processing and packaging steps Deliverable: 1-page diagram plus a 250-word reflection. Guiding Questions: What surprised you about the complexity of the food system? Where or how could you decrease the distance your food travels? If you planned this meal again, how might your plan differently to decrease the carbon footprint?

Climate Impacts on Agriculture Analysis: Find a recent news article about climate impacts on farming- start by checking the LA Times archive of articles on the LMS. Summarize: • What climate event occurred? • Where did this event occur? • What crops or food systems were affected? • What does recovery look like? • What are the broader implications? Deliverable: 1-page written summary.

Community Food Access Study – Food Justice Investigation: Examine your local community and identify: • Grocery stores • Farmers markets • Food assistance resources • Fast food/ convenience stores Deliverable: Make a map of your community and show where these resources are located. Write a 500-word reflection. Guiding questions: • Food access challenges • Food affordability challenges • Climate vulnerabilities • Potential solutions

VIII. **Student Learning Outcomes:**

1. Analyze the effects of climate change on food security, agricultural productivity, and food distribution at local, national, and global scales.
2. Evaluate mitigation and adaptation strategies in food systems with respect to climate resilience, sustainability, and social equity.

3. Analyze how climate change and food systems influence one another, including impacts on agriculture, food security, and environmental sustainability.

SMM 6 Distance Education Application

- ☑ Fully Online
- ☑ Online/Classroom Hybrid (not a delivery option when campus is closed)

1a. Instructor - Student Interaction:
Faculty will maintain regular and substantive interaction (RSI) with students through consistent, instructor-initiated communication in the learning management system (LMS). This will include weekly LMS announcements and inbox communications, timely, substantive written feedback on submitted coursework, and additional communication as needed to support student learning. Faculty will also offer weekly virtual office hours using a video conferencing tool to provide opportunities for students to ask questions, discuss course concepts, and receive individualized guidance. These interactions will support student engagement, monitor learning progress, and provide ongoing academic support throughout the course.

1b. Student - Student Interaction:
Students will engage in regular, substantive peer-to-peer interactions throughout the course through the following activities: 1. Online Discussion Forums: Students will participate in approximately four asynchronous discussion forums throughout the semester, typically every two weeks. 2. Students will analyze course concepts, share perspectives, respond thoughtfully to classmates' contributions, and discuss real-world applications of course material. 3. Small and Large-Group Discussions: During each class session, students will participate in instructor-facilitated small and large-group discussions to exchange ideas, collaborate on problem-solving activities, and explore course topics from diverse perspectives. 4. Collaborative Semester Project: Students will work in teams of 3–5 to research a shared theme or topic and develop a 20–30-minute presentation. Team members will collaborate throughout the semester to share research, discuss findings, develop recommendations, and prepare their presentation for the class. This project promotes ongoing peer communication, teamwork, and collaborative learning.

1c. Student - Content Interaction:
Instruction will include weekly online lectures, assigned readings, and videos to introduce and reinforce course concepts. Students will engage with instructional materials through asynchronous discussion forums, collaborative learning activities, and applied assignments that connect course content to real-world issues. Faculty will provide regular guidance, respond to student questions, offer constructive feedback, and hold weekly virtual office hours to support student learning, clarify concepts, and encourage ongoing engagement throughout the course.

1d. Distance Ed Interactions:

Online class activities that promote class interaction and engagement	Brief Description	% of Online Course Hours
Other (describe)	VC Revision Students will engage in a structured online learning environment that integrates instructor-provided materials, active learning, peer collaboration, and regular communication with the instructor. Course activities will include Open Educational Resource (OER) readings, online lectures, videos, asynchronous discussion forums, collaborative projects, applied assignments, and instructor feedback. These activities will support student engagement, interaction, and mastery of course learning outcomes. ========== Orgininal Script OER course readings (See Appropriate Texts section above.)	20.00%
Videos	Vc revision Students will view and analyze videos from online nonprofit organizations (NGOs), government agencies, and reputable news organizations to reinforce course concepts, explore current issues, and connect course material to real-world applications.. ========== Videos from online NGOs, government websites, news reports etc.	20.00%
Peer Feedback	VC Revision Students will provide constructive, substantive feedback to classmates through online discussion forums and collaborative group projects. Discussion assignments will require students to respond thoughtfully to peers' ideas, evaluate differing perspectives, and support their comments with course concepts and evidence. During group projects, students will exchange feedback on research, ideas, and project development to strengthen their collective work and deepen their understanding of course material.	20.00%

	========== Peer Feedback during discussion assignments. Peer feedback in group projects.	
Online Lecture	Vc Revision Instructor-developed online slide deck presentations and written lectures will provide structured instruction on key course concepts, theories, and learning objectives. Materials will include explanations, examples, and relevant applications to support student comprehension and prepare students for discussions, assignments, and assessments. ========== Orginial Script Online PowerPoint, or written lectures	10.00%
Discussion Boards	Vc Revision Students will participate in asynchronous online discussion forums approximately every two weeks. Discussions will require students to analyze course concepts, apply information from lectures and readings to real-world issues, support their perspectives with evidence, and engage substantively with classmates through thoughtful peer responses. These activities will promote critical thinking, collaborative learning, and the application of course learning objectives. (See Section 7 below for a representative example.) ========== Orginial script: Bi-weekly discussion assignments. (See Section 7 below for a representative example.)	30.00%

2. Organization of Content:

Course content will be organized into sequential weekly modules within the Learning Management System (LMS). Each module will align with the course objectives and provide a structured learning pathway that integrates instructional materials, student engagement, and assessment. Depending on the weekly topic, modules may include: - Lectures: Instructor-developed slide deck presentations and written lectures introducing key concepts and learning objectives. - Readings: Online Open Educational Resource (OER) readings that provide foundational knowledge and support critical analysis. - Videos and Multimedia: Educational videos from nonprofit organizations (NGOs), government agencies, and reputable news organizations connecting course concepts to current issues and real-world applications. - Written Assignments: Individual assignments that assess comprehension, critical thinking, research, and application of course concepts. - Online Discussion Forums: Asynchronous discussions approximately every two weeks, allowing students to analyze course topics, share evidence-based perspectives, and provide constructive feedback to classmates. - Semester Project: A culminating project in which students apply course concepts through research, collaborative work, and a collaborative slide deck presentation. Course materials, assignments, and activities will be delivered through the LMS, which will serve as the central hub for instructional resources, communication, assignment submission, and feedback. Faculty will post announcements as needed and communicate with students through the LMS inbox throughout the semester. Grades and substantive written feedback will generally be provided within 72 hours after assignment due dates, excluding the final project presentation, to support student progress and learning. Faculty will also provide regular opportunities for direct communication through virtual office hours and individualized guidance as needed.

3. Assessments:

% of grade	Activity	Assessment Method
10.00%	Semester Project Final Paper	VC revision Students will prepare an individually written, 3–5-page paper analyzing a selected topic related to the semester project. The paper will demonstrate research, critical thinking, application of course concepts, and evidence-based analysis. Faculty will evaluate the paper using established criteria aligned with course objectives and provide written feedback. ========== Orginial Script 3–5 page individually written paper of the semester project
20.00%	Final Semester Project Presentation	Vcrevised Students will work in small groups to develop a 20–30-minute voice-narrated slide presentation on their semester project topic. Faculty will designate student groups and list in the LMS weekly module. Evaluation will consider accuracy of content, application of course concepts, quality of research, organization, supporting evidence, and effectiveness of communication. Students will demonstrate collaborative learning and their ability to communicate findings to class peers through a voice-narrated slide deck presentation. ========== 20-30 minute small group in-class oral presentation.
10.00%	Participation	Vc Revised Students will participate in small- and large-group online discussions and deliver short, 5–10-minute voice-narrated slide presentations. These activities will assess students' understanding of course material, ability to communicate ideas, critical thinking, and application of concepts to real-world issues. ========== OG Script In-class participation in large and small-group discussions. Short (5-10 minute), small group presentations to class.

30.00%	Written Assignments	Vc Revision Students will complete biweekly written assignments of approximately 1–3 pages. Assignments will require students to analyze readings and instructional materials, evaluate case studies, and apply course concepts. Faculty will assess comprehension, analysis, use of evidence, and written communication. ========== OG Script Bi-weekly 1–3 page written assignments.
30.00%	Discussion Forum	Vc revise Students will participate in asynchronous discussion forums that require substantive engagement with course content and meaningful responses to classmates. Students will support their perspectives with evidence, consider differing viewpoints, and demonstrate critical thinking and respectful communication. ========== OG script Online discussion forums requiring student-student interaction.

4. Instructor's Technical Qualifications:
Faculty will provide ongoing guidance and substantive feedback to help students identify strengths, address areas for improvement, and monitor their progress toward course learning outcomes. Grades and feedback will generally be provided within 72 hours of assignment due dates, excluding the final project presentation. Assessment criteria and expectations will be communicated in advance, and online assessments will be designed to provide meaningful, verifiable evidence of student learning. No single assessment will account for more than 30% of the total course grade.

5. Student Support Services:
Students will have access to links within the LMS course site and course syllabus to Santa Monica College (SMC) student support services and resources. These will include Disabled Students Programs and Services (DSPS)/Center for Students with Disabilities, Counseling, Library, Admissions, Online Readiness Tutorials, the SMC Food Pantry, and the SMC Sustainability Center. Links to additional resources, including LMS Student Guides and Student Support Hotlines, will also be provided to help students navigate the online learning environment, access academic and basic-needs support, and connect with services that promote student success and well-being.

6. Accessibility Requirements:
The course will be designed to support accessibility for students with disabilities and align with applicable accessibility requirements, including Section 508 of the Rehabilitation Act. Course materials and instructional content will be reviewed to promote accessibility and provide equitable access to learning resources. Accessibility measures will include: 1. Alternative Text: All meaningful images will include descriptive alternative text to support students using screen readers. 2. Accessible Headings:Course pages and instructional materials will use properly structured heading styles to support navigation and readability. 3. Video Captioning:Videos will include accurate captions to ensure access to audiovisual content for students who are deaf or hard of hearing. 4. Descriptive Links: Internet links will use descriptive text that clearly communicates the destination or purpose of each link. 4. Color Contrast: Text and graphics will provide sufficient color contrast to support readability for students with visual impairments. 6. Readable Formatting: Content will use legible font sizes, clear formatting, and accessible document structures to improve readability and navigation. These practices will help ensure that students can access, navigate, and engage with course materials using a range of assistive technologies and learning needs.

7. Representative Online Lesson or Activity:
Course Objective 5: Analyze the impacts of consumer food choices, dietary patterns, and food waste on climate change and environmental sustainability.
Online Lesson/Activity: Food Waste—Individual or Systemic Problem?

Students will review online lectures, multimedia resources, and assigned readings examining the environmental impacts of food production, consumption, and waste. Students will then participate in a threaded online discussion addressing the question: Is reducing food waste primarily the responsibility of individuals, businesses, or governments?

Students will submit an initial written response of 2–4 paragraphs using evidence from course materials, including at least one quotation from a lecture with the corresponding slide reference and one quotation from a reading with the page number. Students will also respond to at least one classmate whose perspective differs from their own, providing a respectful, evidence-based explanation of their agreement or disagreement.

The discussion forum will be hosted in the course learning management system, allowing students to engage asynchronously, evaluate diverse perspectives, and apply course concepts to real-world food system challenges. Students will be assessed on their understanding of course content, use of supporting evidence, critical analysis, and meaningful engagement with peers.

Include:
o At least one quote from a lecture with the lecture slide referenced

o At least one quote from a reading with the page number referenced

Peer response: worth up to 5 points
Respond to at least one classmate whose post is different from yours. Keep your response to 1–3 paragraphs. Be respectful, specific, and thoughtful in your response. Your comments to your peer(s) should explain why you agree or disagree. Do not respond simply with “I agree” or “I disagree.”

Important: You will not be able to view other students’ posts until you submit your own initial response.

New Course:
SOCIAL WORK & HUMAN SERVICES 20, Youth Wellness Coaching and Case Management

Units:	1.00
Total Instructional Hours (usually 18 per unit):	18.00
Hours per week (full semester equivalent) in Lecture:	1.00
In-Class Lab:	0.00
Arranged:	0.00
Outside-of-Class Hours:	36.00
Transferability:	Transfers to CSU
Degree Applicability:	Credit – Degree Applicable
Advisory(s):	SWHS 1
Proposed Start:	Fall 2027
TOP/SAM Code:	210400 - Human Services / D - Possibly Occupational
Grading:	Letter Grade or P/NP
Repeatability:	No
Library:	Library has adequate materials to support course
Minimum Qualification:	Counseling, Interdisciplinary Studies, Master's degree in Human Services or Social Work OR Master's degree in Sociology or Psychology and 12 units of upper division or graduate course work in Counseling.
Program Impact:	Forthcoming Certificate: Wellness Coach CoA

I. **Catalog Description**

This course introduces case management in the behavioral health field and addresses various models of case management. Additionally, the course addresses several of the major competencies required of youth wellness coaching, including essential approaches to both wellness coaching and case management. The importance of effective service delivery planning and coordination are emphasized.

II. **Examples of Appropriate Text or Other Required Reading:**

(include all publication dates; for transferable courses at least one text should have been published within the last 7 years)

1. Fundamentals of Case Management Practice: Skills for the Human Service, 6th, Summers, Nancy, Cengage Learning © 2025
2. NASW Standards for Social Work Case Management, National Association of Social Workers, National Association of Social Workers © 2013
3. Standards of Practice for Case Management, Case Management Society of America, Case Management Society of America © 2022
4. Human Trafficking in America's Schools: What Schools Can Do To Prevent,, Respond, and Help Students To Recover From Human Trafficking, U.S. Department of Education, Office of Safe and Supportive Schools, U.S. Department of Education, Office of Safe and Supportive Schools © 2021

III. **Course Objectives**

Upon completion of this course, the student will be able to:

1. Describe the principles and goals of case management.
2. Describe significant social/demographic information to collect and make use of for case management in the context of different models of case management.
3. Identify possible cultural issues that may affect case management.
4. Identify ethical issues related to case management.
5. Construct an Individual Wellness Plan.
6. Describe the elements of a comprehensive intake screening and assessment process, including basic needs, behavioral health, and commercial sexual exploitation of children.
7. Describe crisis management and de-escalation techniques.
8. Describe and apply trauma-informed approach to care.
9. Describe and apply strengths-based approach to care.

IV. **Methods of Presentation:**

Lecture and Discussion, Distance Education, Visiting Lecturers, Group Work, Discussion

V. **Course Content**

% of Course	Topic
30.000%	Case Management • Principles and Goals • Models of Case Management ○ Ecological, Humanistic, and Recovery Models • Roles in Case Management
30.000%	Approaches to Wellness Coaching and Care • Cultural Competence • Trauma-informed approach to care • Strength-based approach to care • Crisis Management and De-escalation

40.000%	Service Delivery Planning and Coordination
	• Screening Processes
	  ○ Substance Abuse and Mental Health Services Administration (SAMHSA) Dimensions of Wellness / Individual Wellness Plans
	  ○ Basic Needs
	  ○ Behavioral Health
	  ○ Commercial Sexual Exploitation of Children (CSEC)
	• Plan development and goal setting
	• Service collaboration and teamwork
	• Documentation and recording
	• Legal and ethical considerations

100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
30%	Exams and Quizzes: 2-4 quizzes
25%	Final exam: Cumulative Exam
15%	Class Participation: Meaningful participation in class discussions
30%	Written assignments: 2-3 written assignments
100%	Total

VII. **Sample Assignments:**
Case Study: Based on the case study provided, draft a case management plan taking into consideration issues of cultural competence and approaches to care.
Class Presentation: Based on the case study provided, prepare and deliver orally a service plan and illicit the feedback of your colleagues prior to revising your plan and submitting the final plan.
Intake Screening Role Play: Based on the provided role play, conduct an intake screening of your classmate and submit a summary of the intake as well as a proposed strength-based approach to care.

VIII. **Student Learning Outcomes:**
1. Interpret and evaluate the service needs and potential approaches to care of a client in a case study.
2. Describe the role of case management in the service delivery process.
3. Identify the main aspects of the intake screening process.

SWHS 20 Distance Education Application

☑ Fully Online

1a. Instructor - Student Interaction:

The instructor will initiate contact with students before the course begins through a welcome letter (or video) that explains important details about the course including course materials, start and end dates, reliable access to the internet and technology, instructions on how students will access the course via the Course Management System (CMS), links to guides and support, and tips on how to be successful in the course. The instructor will also initiate contact at the beginning of the course with a warm and welcoming video, email, or announcement to students that introduces the course and the instructor, and directs students on where and how to get started. The instructor will maintain regular and effective instructor-initiated contact with students throughout the semester using a variety of CMS tools including: Announcements, Assignment (feedback), Discussion (comments), Video Conference (office hours), Grading (Message Students Who …), Pages, Email/Message, ... • Announcements will be used at the beginning of each learning unit to announce the beginning of a new topic and assignments, and/or used to remind students of upcoming due dates. • At the beginning of each learning unit (module), the instructor will introduce students to the new topic, the types of assignments, expected workload, and learning objectives on Pages • Instructor will comment and provide regular and constructive feedback on Assignments. • Instructor will use the Discussion tool (or similar) to post regular Discussion forums, and comment on and/or contribute to the discussion, or use the Discussion tool as a Q&A for student-initiated contact with the instructor. • Instructor will conduct office hours through Video Conference, Chat, or Email/Message. • Instructor will use Message Students Who … through the Grading tool to send reminders to students about upcoming due dates, message and send kudos to students who earned a high score on a particular quiz/assignment, and reach out to students who earned a low score to offer support and/or provide additional resources. • Instructor will use "early alert" tools to send kudos to students performing well, respond to student-raised flags, and connect students to resources as needed. • Instructor will use CMS inbox to email or respond to emails from students. • Instructor will use available tools to survey students at the end of the course anonymously and to poll/survey students as a just-in-time teaching strategy to determine if learning is occurring and tweak where necessary or to get the pulse of the class Students will be encouraged to initiate contact with the instructor throughout the semester with instructor contact information clearly posted and easy to find on the syllabus and homepage along with expected response times (within 24 hours). The instructor may also provide student-initiated contact opportunities through Chat, Discussion (Q&A), or student-requested office hours via Video Conference, Chat, or Conference, where appropriate.

1b. Student - Student Interaction:

The instructor will provide opportunities for and encourage regular and effective student-initiated contact with other students using a variety of CMS (and other) tools, methods, and assignments/activities. These include discussions (group, Q&A, open-ended prompts), group assignments, peer review, group chats (audio, video, written), collaboration on documents using CMS tools, or group work through video conferencing break-out sessions or the creation of Student Lounge/Café using external tools. The idea behind using various tools, methods, and assignments/activities is to accommodate a variety of communication styles and create an inclusive community of learners in the online environment. The instructor will also provide guidelines with each of these assignments/activities that explain the standard/required levels of student participation (both quantity and quality) and how that participation will be evaluated.

1c. Student - Content Interaction:

The instructor will provide frequent opportunities for students to interact with varied and substantial course content. This content will be chunked into manageable portions and sequenced in modules, making it easy for students to follow and navigate. Both the variety and organization of the content will encourage frequent student engagement with the course content, and facilitate student learning. The instructor will also include unit learning objectives (such as students will be able to define, explain, assess, apply, etc.) at the beginning of each module, and align the content, assignments, activities, and assessments to these learning objectives. In terms of variety of content and frequency of interaction, a typical module will include a combination of reading, video lesson, slide presentation, case studies, policy briefs, activity, deliberate practice, discussion Q&A, and poll/survey to gauge student learning in addition to frequent and varied formative and summative assessments (discussed below) The instructor will include instructions for learners to work with the content in meaningful ways such as explaining the purpose of a particular reading or resource, instructing students to take notes during a video or slide presentation, reminding students to keep important points in mind while reading, alerting students that they will be discussing or reporting on the content in a follow-up assignment, etc. The instructor will also offer individualized learning opportunities, such as providing resource pages or supplemental materials for remedial activities or recommendations for more advanced learning.

1d. Distance Ed Interactions:

Online class activities that promote class interaction and engagement	Brief Description	% of Online Course Hours

Online Lecture	Various forms of assessment	50.00%
Discussion Boards	Engaging with instructor prompts and responding to classmates entries	40.00%
Exams	Various forms of assessment	10.00%

2. Organization of Content:

The instructor will organize the content in meaningful and distinct learning units (modules) by week, topic, or major theme to facilitate student learning, and ensure that the course material is accessible and easy for students to navigate. This will reduce the cognitive load for students and facilitate student learning. The instructor will include unit learning objectives at the beginning of each module, and align the content, assignments, activities, and assessments to these objectives. The instructor will present content using a variety of modalities such as text (readings, slides), audio (podcast, interviews), video (lessons, lecture, presentations) and graphics (graphs, tables, charts, visuals, and banners), to facilitate student-centered learning. The instructor will use multiple CMS tools to deliver the content and streamline access to materials and activities for students. These tools include Pages to deliver reading, slides, and deliberate practice, and to embed or link to videos and audio, Discussion forums to deliver prompts on course content, Chat to deliver responses to questions, Collaboration and Groups to deliver student-created content, Quiz tool to deliver polls & surveys. The instructor will also use external apps such as Video Conference to deliver lessons, responses to questions, and share documents, tools to deliver polls & surveys, and tools to deliver video and active learning video lessons. The instructor will include a course outline (schedule) and list all materials/tools required for student success on the syllabus.

3. Assessments:

% of grade	Activity	Assessment Method
20.00%	Participation	Instructor will provide regular opportunities for student-student interaction and student-content interaction, both of which will also involve interaction with the instructor, vis a vis feedback and assessments. For example, students may work collaboratively to complete a study guide in preparation for an exam or essay.
30.00%	Written Submission	Students will be paired through the Peer Review function in the CMS in order to provide feedback to each other on their written work prior to submission of final. Instructor will provide feedback to students privately in Speed Grader.
50.00%	Multiple Quizzes and Exams	Instructor will create exams using the Quizzes function in the CMS. For multiple choice exams, instructor will create a robust database of questions so that exams can be randomly generated for each student. This will help protect the integrity of exams and minimize potential for academic dishonesty. A variety of short response (written) prompts will also be provided for the same reasons. For both types of questions, instructor will provide feedback to students privately.

4. Instructor's Technical Qualifications:

The college’s existing technology and CMS are sufficient for delivering this course. Individual faculty members would greatly benefit from additional professional development on equity-minded, effective online teaching practices and from professional development to enhance their technological skills.

5. Student Support Services:

The instructor will provide students with active links to student support and institutional services and policies, so that students do not have to leave the CMS to access these resources or learn about these policies. These resources and policies will be clearly labeled and easy to find, and the instructor will provide instructions about use and expectations, where appropriate. Resources and policies include: • Online Counseling • Disability Resources • Financial Aid • Bookstore • Online tutoring. • CMS Resources and Technical Support • Title IX Policy & Resources • SMC Drop & Withdrawal Policies • Livesafe • Veteran’s Resource Center • Resources for DREAMERS, DACAmented students, and undocumented students • Pronouns • Honor Code • Netiquette

6. Accessibility Requirements:

All content for the course will be 508 compliant using the tools provided by the college. For example: • Content Pages will consistently use heading styles such as Heading 2, Heading 3, etc. • Lists will be created using the Bullet or Numbered List tool in the rich text editor. • Links will not use non-descriptive phrases like CLICK HERE, for example. • Underlining will only be used to denote active hyperlinks. • There will be sufficient color contrast between foreground and background to meet Section 508 standards. • Visual elements (color, bolding, all caps) will not be used as the sole way to convey importance or meaning. • Images (including those used in Pages, Discussions, Quizzes, and Assignments) will use descriptive alternative text

7. Representative Online Lesson or Activity:

Based on the case study you have been given, prepare a service plan. Submit a 3-4 minute video explaining your draft plan. Incorporate classmate feedback to your draft plan and submit a final written plan.

Advisory Checklist and Worksheet: SWHS 20
Proposed Advisory: SWHS 1

SECTION 1 - CONTENT REVIEW:

Criterion	N/A	Yes	No
1. Faculty with appropriate expertise have been involved in the determination of the advisory.		**X**	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.		**X**	
3. Selection of this advisory is based on tests, the type and number of examinations, and grading criteria.		**X**	
4. Selection of this advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.		**X**	
5. The body of knowledge and/or skills which are recommended for success before enrollment have been specified in writing (see below).		**X**	
6. The course materials presented in this advisory have been reviewed and determined to teach knowledge or skills recommended for success in the course requiring this advisory.		**X**	
7. The body of knowledge and/or skills recommended for success in this course have been matched with the knowledge and skills developed by the advisory course.		**X**	
8. The body of knowledge and/or skills taught in the advisor are not an instructional unit of this course.		**X**	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.		**X**	

ENTRANCE SKILLS RECOMMENDED FOR SUCCESS IN: **SWHS 20**
(It is recommended that the student to be able to do or understand the following BEFORE entering the course)

A)	Identify the various services provided by local social welfare agencies.
B)	Summarize the key aspects and challenges of the social service delivery system in the United States.
C)	Define the various social work and human service practitioner roles in the current service delivery system environment..
D)	Outline strategies and skills needed to successfully work within social welfare and human services agencies and institutions.
E)	Describe the legal, ethical, and professional practice responsibilities of working with social work and human service organizations.
F)	Explain the relationship between cultural humility, oppressed groups, and professional practice perspectives for social work and human services practitioners.

EXIT SKILLS (objectives) FROM: **SWHS 1**
(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Identify the various services provided by local social welfare agencies.
2.	Summarize the key aspects and challenges of the social service delivery system in the United States.
3.	Define the various social work and human service practitioner roles in the current service delivery system environment..
4.	Outline strategies and skills needed to successfully work within social welfare and human services agencies and institutions.
5.	Describe the legal, ethical, and professional practice responsibilities of working with social work and human service organizations.
6.	Explain the relationship between cultural humility, oppressed groups, and professional practice perspectives for social work and human services practitioners.

		ENTRANCE SKILLS FOR: **SWHS 20**							
		A	B	C	D	E	F	G	H
EXIT SKILLS From: **SWHS 1**	1	x							
	2		x						
	3			x					
	4				x				
	5					x			
	6						x		
	7								
	8								

New Course:
SOCIAL WORK & HUMAN SERVICES 95B, Youth Wellness Coach Fieldwork

Units:	1.00
Total Instructional Hours (usually 18 per unit):	54.00
Hours per week (full semester equivalent) in Lecture:	0.00
In-Class Lab:	0.00
Arranged:	3.00
Outside-of-Class Hours:	0.00
Transferability:	Transfers to CSU
Degree Applicability:	Credit – Degree Applicable
Pre/Corequisite(s):	SWHS 95
Proposed Start:	Fall 2027
TOP/SAM Code:	210400 - Human Services / D - Possibly Occupational
Grading:	P/NP Only
Repeatability:	No
Library:	Library has adequate materials to support course
Minimum Qualification:	Counseling, Interdisciplinary Studies, Master's degree in Human Services or Social Work OR Master's degree in Sociology or Psychology and 12 units of upper division or graduate course work in Counseling OR
Program Impact:	Proposed for inclusion in a forthcoming degree or certificate • Wellness Coaching CoA

I. **Catalog Description**

This course offers the student a supervised field experience in a youth-serving community organization, agency, or institution, allowing the student to apply knowledge and learn new skills outside of the classroom environment. This course is designed to provide the student with an opportunity to observe, practice, and develop skills that would facilitate employment as a Wellness Coach serving youth.

II. **Examples of Appropriate Text or Other Required Reading:**

(include all publication dates; for transferable courses at least one text should have been published within the last 7 years)

1. Days in the Lives of Social Workers: 62 Professionals Tell Real-Life Stories from Social Work Practice, 5th, Grobman, Linda May, White Hat Communications © 2019
2. Code of Ethics, National Association of Social Workers, NASW Press © 2021
3. Ethical Standards for Human Services Professionals, National Organization for Human Services, NOHS © 2024

III. **Course Objectives**

Upon completion of this course, the student will be able to:

1. Apply theoretical knowledge obtained in the prerequisite (Introduction to Social Work and Human Services, Social Work and Human Services Fieldwork, and Social Work and Human Services Seminar) courses to the youth wellness coach fieldwork experience.
2. Evaluate the fieldwork experience in relation to prerequisite (Introduction to Social Work and Human Services, Social Work and Human Services Fieldwork, and Social Work and Human Services Seminar) courses objectives, career plans, and personal growth.
3. Demonstrate the ethics, values, and professional skills of social and human service work and use in real-world field setting of youth wellness coaching.

IIIb. **Arranged Hours Objectives:**

Upon completion of this course, the student will be able to:

1. Observe, practice, and develop skills that would facilitate gaining employment in the human services field.

IV. **Methods of Presentation:**

Field Experience

IVb. **Arranged Hours Instructional Activities:**

Field Experience

V. **Course Content**

% of Course	Topic
100.000%	Application of the following to the fieldwork experience: • The developmental journey of becoming a youth wellness coach practitioner and the nature of wellness coaching as a helping profession. • The Codes of Ethics (e.g., NASW or NOHS) and social justice principles. • The legal context of youth wellness coaching, and the role of supervision in the professional development journey. • The resources and services that clients need and depend upon. • The needs, interests, resources, values and opportunities of people who vary in terms of race, nationality, ethnicity, sexuality, spirituality, gender, age, abilities, economic status, or language. • The progressive nature and skills of youth wellness coaching.
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
100%	Other Assessments: Documented completion of required field hours (54 hours)
100%	Total

VII. **Sample Assignments:**
Fieldwork: Complete 54 hours of fieldwork with a social service agency approved by your instructor.
Reflection Journal: Submit a reflection journal regarding your experiences.

VIII. **Student Learning Outcomes:**
1. Synthesize how theoretical ideas apply in practical settings in relation to youth wellness coaching.
2. Develop career and personal growth plans in relation to the youth wellness coaching fieldwork experience.
3. Articulate and critique the ethics, values, and skills observed and applied to the youth wellness coaching fieldwork experience.

Prerequisite / Corequisite Checklist and Worksheet: SWHS 95B
Pre/corequisite: SWHS 95: Social Work and Human Services Fieldwork

SECTION 1 - CONTENT REVIEW: If any criterion is not met, the prerequisite will be disallowed.

Criterion	Met	Not Met
1. Faculty with appropriate expertise have been involved in the determination of the prerequisite, corequisite or advisory.	X	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.	X	
3. Selection of this prerequisite, corequisite or advisory is based on tests, the type and number of examinations, and grading criteria.	X	
4. Selection of this prerequisite, corequisite or advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.	X	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	X	
6. The course materials presented in this prerequisite or corequisite have been reviewed and determined to teach knowledge or skills needed for success in the course requiring this prerequisite.	X	
7. The body of knowledge and/or skills necessary for success in the course have been matched with the knowledge and skills developed by the prerequisite, corequisite or advisory.	X	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	X	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.	X	

SECTION II - ADDITIONAL LEVEL OF SCRUTINY:

X Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)
Complete the Prerequisite Worksheet

ENTRANCE SKILLS FOR **SWHS 95B**
(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Apply theoretical and practical knowledge obtained in the prerequisite fieldwork experience and reflection seminar.
B)	Evaluate the fieldwork experience in relation to the prerequisite fieldwork experience and reflection seminar objectives, career plans, and personal growth.
C)	Demonstrate the ethics, values, and professional skills of social and human service work and use in real-world field settings.

EXIT SKILLS (objectives) FOR **SWHS 95**
(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Apply theoretical and practical knowledge obtained in the prerequisite fieldwork experience and reflection seminar.
2.	Evaluate the fieldwork experience in relation to the prerequisite fieldwork experience and reflection seminar objectives, career plans, and personal growth.
3.	Demonstrate the ethics, values, and professional skills of social and human service work and use in real-world field settings.

	ENTRANCE SKILLS FOR (SWHS 95B)								
EXIT SKILLS FOR (SWHS 95)		A	B	C	D	E	F	G	H
	1	x							
	2		x						
	3			x					
	4								
	5								
	6								
	7								
	8								

Santa Monica College
Program of Study
Biotechnology & Cell Science Laboratory Technician AS/Certificate of Achievement

The A.S. Degree/Certificate of Achievement - Biotechnology and Cell Science Laboratory Technician provides advanced technical preparation for students pursuing laboratory technician and related positions in biotechnology, biopharmaceutical, and life science environments. As a stackable certificate, the program builds upon the foundational laboratory skills developed in the Biotechnology/Life Sciences Laboratory Assistant certificate. The curriculum emphasizes advanced biotechnology laboratory techniques, including molecular biology, protein analysis, mammalian cell culture, and immunoassay methods. Students further develop competencies in good laboratory practices, laboratory documentation, quality assurance and quality control, quality systems, regulatory compliance, and scientific communication. A required Life Science Internship provides an opportunity to apply laboratory and professional skills in a workplace setting. The certificate prepares students with advanced technical and workplace competencies for biotechnology laboratory technician and related positions. Students may continue toward the Associate of Science by completing the general education and degree requirements for a minimum of 60 semester units. The A.S. degree provides students with broader educational preparation that complements their specialized biotechnology training and supports continued academic and career development. Students can complete the certificate requirements in 3 semesters, including summer and/or winter intersessions. No state or national license is required for entry-level biotechnology technician positions.

Program Learning Outcomes:
Perform advanced biotechnology laboratory techniques, including molecular biology, protein analysis, mammalian cell culture, and immunoassay methods.

- BIOL 30: Apply foundational concepts in molecular biology, cellular biology, and genetics to solve practical problems in biotechnological applications.
- BIOL 30: Execute core laboratory procedures following Good Laboratory Practices, including safety, PPE, notebook documentation, measurements, solution preparation, microscopy, pipetting, and quantitative data collection.
- BIOL 31: Apply principles of molecular biology, microbiology, and protein science to biotechnology techniques.
- BIOL 32: Perform mammalian cell culture techniques, including cell subculturing, cryopreservation, and cell-based assays, following established laboratory protocols.
- BIOL 32: Apply aseptic techniques and properly operate laboratory equipment to maintain contamination-free cultures and optimal conditions for mammalian cell growth.
- BIOL 33: Design and perform immunologic testing methods to address specific biological and clinical questions.
- BIOL 33: Analyze and interpret immunoassay results to evaluate assay performance, reliability, and biological significance.
- CHEM 10: When conducting an experiment, the student will follow written procedures accurately and safely, demonstrate competence with lab equipment and measuring devices, and record data clearly and precisely.

Apply Good Laboratory Practices (GLP) and quality systems, including laboratory safety, quality assurance and control, regulatory documentation, and standard operating procedures.

- BIOL 30: Execute core laboratory procedures following Good Laboratory Practices, including safety, PPE, notebook documentation, measurements, solution preparation, microscopy, pipetting, and quantitative data collection.
- BIOL 31: Explain the roles of Good Laboratory Practices, Good Manufacturing Practices, standard operating procedures, and quality assurance and quality control systems in biotechnology operations.
- BIOL 31: Produce and maintain industry-standard laboratory documentation, including laboratory notebooks, data records, and technical reports.
- BIOL 32: Apply aseptic techniques and properly operate laboratory equipment to maintain contamination-free cultures and optimal conditions for mammalian cell growth.
- BIOL 32: Analyze and interpret mammalian cell culture data, and accurately document experimental procedures, observations, calculations, and results using laboratory notebooks and industry-standard documentation practices.
- BIOL 34: Demonstrate technical knowledge of the different types of documents and records used in a regulatory environment.
- BIOL 36: Apply quality control and assurance tools and methods to evaluate and improve product and process quality.
- BIOL 36: Apply quality tools and methods to evaluate and improve product and process quality.
- BIOL 36: Evaluate documentation practices for compliance with regulatory requirements in biotechnology settings.

- BIOL 36: Investigate deviations, nonconformances, and other quality-related events and determine appropriate corrective actions.
- BIOL 36: Assess quality control and assurance system components, including auditing, validation, and risk management.
- BIOL 90B: Participate effectively in professional activities assigned by the internship supervisor
- CHEM 10: When conducting an experiment, the student will follow written procedures accurately and safely, demonstrate competence with lab equipment and measuring devices, and record data clearly and precisely.

Analyze and interpret experimental data to evaluate results, troubleshoot laboratory procedures, and assess experimental outcomes.

- BIOL 30: Analyze and interpret scientific data using laboratory notebooks, tables, and graphical representations.
- BIOL 31: Analyze and interpret experimental results to evaluate data quality, procedural errors, and experimental outcomes.
- BIOL 32: Analyze and interpret experimental results from cell-based assays to assess cell growth, viability, and behavior.
- BIOL 33: Interpret experimental results from immunoassays to identify and quantify biological substances.
- BIOL 34: Critically analyze scientific interpretations of experimental data in scientific communications.
- BIOL 34: Distinguish between ethical and unethical behavior in experimental design, data collection, and presentation of scientific results.
- BIOL 34: Effectively communicate scientific findings for both the scientific community and a general audience.
- BIOL 34: Demonstrate technical knowledge of the different types of documents and records used in a regulatory environment.
- BIOL 36: Apply quality tools and methods to evaluate and improve product and process quality.
- BIOL 36: Investigate deviations, nonconformances, and other quality-related events and determine appropriate corrective actions.
- CHEM 10: The student will demonstrate the ability to solve chemical problems using logical procedures based on well-established scientific principles.
- CHEM 10: The student will be able to use chemical theories to explain and predict observable phenomena, using the principles developed in Chemistry 10.
- CHEM 10: When conducting an experiment, the student will follow written procedures accurately and safely, demonstrate competence with lab equipment and measuring devices, and record data clearly and precisely.
- STAT C1000: *When given a data set, analyze the data set and design a presentation of the information using tables, graphs and statistical calculations.
- STAT C1000: *When given sample data, decide on and use appropriate estimation strategies to make inferences about the important characteristics of population data, including the mean, proportion and variation
- STAT C1000: *When given sample data, decide on and use an appropriate test to reach conclusions about a hypothesis made about a population parameter.

Communicate scientific and technical information effectively and demonstrate professional practices appropriate for regulated laboratory and workplace settings.

- BIOL 30: Analyze biotechnology company structures and biomanufacturing workflows, including workforce roles and production processes.
- BIOL 30: Execute core laboratory procedures following Good Laboratory Practices, including safety, PPE, notebook documentation, measurements, solution preparation, microscopy, pipetting, and quantitative data collection.
- BIOL 31: Produce and maintain industry-standard laboratory documentation, including laboratory notebooks, data records, and technical reports.
- BIOL 32: Apply aseptic techniques and properly operate laboratory equipment to maintain contamination-free cultures and optimal conditions for mammalian cell growth.
- BIOL 32: Analyze and interpret mammalian cell culture data, and accurately document experimental procedures, observations, calculations, and results using laboratory notebooks and industry-standard documentation practices.
- BIOL 33: Compare immunoassay techniques based on their principles, advantages, limitations, and applications.
- BIOL 34: Critically analyze scientific interpretations of experimental data in scientific communications.
- BIOL 34: Distinguish between ethical and unethical behavior in experimental design, data collection, and presentation of scientific results.
- BIOL 34: Effectively communicate scientific findings for both the scientific community and a general audience.
- BIOL 34: Demonstrate technical knowledge of the different types of documents and records used in a regulatory environment.

- BIOL 36: Evaluate documentation practices for compliance with regulatory requirements in biotechnology settings.
- BIOL 90B: Demonstrate knowledge of the operation of the organization hosting the internship
- BIOL 90B: Participate effectively in professional activities assigned by the internship supervisor
- CHEM 10: When conducting an experiment, the student will follow written procedures accurately and safely, demonstrate competence with lab equipment and measuring devices, and record data clearly and precisely.
- STAT C1000: *When given a data set, analyze the data set and design a presentation of the information using tables, graphs and statistical calculations.

Required Courses	**35.0**
BIOL 30[DE] Fundamentals of Biotechnology 1	5.0
BIOL 31 Fundamentals of Biotechnology 2: From Genes to Proteins	5.0
BIOL 32 Cell Culture Methods & Techniques	4.0
BIOL 33 Immunoassay Methods	4.0
BIOL 34 Science Communication for Regulated Environments	3.0
BIOL 36 Quality Control and Assurance	3.0
BIOL 90B Life Science Internship	2.0
CHEM 10 Introductory General Chemistry	5.0
STAT C1000[DE] Introduction to Statistics (formerly MATH 54)	4.0
	Total: 35.0

Santa Monica College
Program of Study
Biotechnology/Life Sciences Laboratory Assistant Certificate of Achievement

The life sciences/biotechnology sector is a significant and growing industry in the Los Angeles region, creating continued demand for a skilled technical workforce. The widening supply-and-demand gap, along with the need for highly skilled laboratory workers, emphasizes the necessity to prepare students to become the next generation of workers in this dynamic sector. The stackable Biotechnology/Life Sciences Laboratory Assistant Certificate of Achievement aligns academic offerings with industry needs and prepares students with hands-on laboratory skills and industry-required workplace competencies. The curriculum emphasizes biotechnology laboratory techniques, good laboratory practices, laboratory documentation, quality systems, and effective communication in regulated environments. Students also receive training in quality assurance and quality control principles, regulatory compliance, and quality management systems applicable to biotechnology and biopharmaceutical environments. The certificate provides students with foundational preparation for entry-level laboratory assistant positions and establishes a pathway for continued study in biotechnology and related life science fields. Students can complete the requirements in one year, including summer and/or winter intersessions. No state or national license is required for entry-level biotechnology technician positions.
Recommended Preparation: BIOL 21, BIOL 22, and MATH 4 or equivalent

Program Learning Outcomes:
Perform biotechnology laboratory techniques using appropriate instruments, reagents, protocols, and standard operating procedures.

- BIOL 30: Analyze biotechnology company structures and biomanufacturing workflows, including workforce roles and production processes.
- BIOL 30: Execute core laboratory procedures following Good Laboratory Practices, including safety, PPE, notebook documentation, measurements, solution preparation, microscopy, pipetting, and quantitative data collection.
- BIOL 31: Apply principles of molecular biology, microbiology, and protein science to biotechnology techniques.
- BIOL 31: Explain the roles of Good Laboratory Practices, Good Manufacturing Practices, standard operating procedures, and quality assurance and quality control systems in biotechnology operations.
- BIOL 31: Produce and maintain industry-standard laboratory documentation, including laboratory notebooks, data records, and technical reports.
- BIOL 34: Distinguish between ethical and unethical behavior in experimental design, data collection, and presentation of scientific results.
- BIOL 34: Demonstrate technical knowledge of the different types of documents and records used in a regulatory environment.
- BIOL 36: Apply quality tools and methods to evaluate and improve product and process quality.
- CHEM 10: When conducting an experiment, the student will follow written procedures accurately and safely, demonstrate competence with lab equipment and measuring devices, and record data clearly and precisely.

Apply Good Laboratory Practices (GLP), laboratory safety, and quality principles in biotechnology laboratory and production environments.

- BIOL 30: Analyze biotechnology company structures and biomanufacturing workflows, including workforce roles and production processes.
- BIOL 30: Analyze and interpret scientific data using laboratory notebooks, tables, and graphical representations.
- BIOL 31: Explain the roles of Good Laboratory Practices, Good Manufacturing Practices, standard operating procedures, and quality assurance and quality control systems in biotechnology operations.
- BIOL 31: Produce and maintain industry-standard laboratory documentation, including laboratory notebooks, data records, and technical reports.
- BIOL 34: Demonstrate technical knowledge of the different types of documents and records used in a regulatory environment.
- BIOL 36: Apply quality control and assurance tools and methods to evaluate and improve product and process quality.
- BIOL 36: Apply quality tools and methods to evaluate and improve product and process quality.
- BIOL 36: Evaluate documentation practices for compliance with regulatory requirements in biotechnology settings.
- BIOL 36: Investigate deviations, nonconformances, and other quality-related events and determine appropriate corrective actions.
- BIOL 36: Assess quality control and assurance system components, including auditing, validation, and risk management.

- CHEM 10: When conducting an experiment, the student will follow written procedures accurately and safely, demonstrate competence with lab equipment and measuring devices, and record data clearly and precisely.

Maintain accurate scientific and regulatory documentation using industry-standard laboratory notebooks, data records, technical reports, and documentation practices.

- BIOL 30: Analyze and interpret scientific data using laboratory notebooks, tables, and graphical representations.
- BIOL 31: Produce and maintain industry-standard laboratory documentation, including laboratory notebooks, data records, and technical reports.
- BIOL 34: Demonstrate technical knowledge of the different types of documents and records used in a regulatory environment.
- BIOL 36: Evaluate documentation practices for compliance with regulatory requirements in biotechnology settings.
- CHEM 10: When conducting an experiment, the student will follow written procedures accurately and safely, demonstrate competence with lab equipment and measuring devices, and record data clearly and precisely.

Communicate scientific and technical information effectively to scientific, technical, and general audiences in laboratory and workplace settings.

- BIOL 31: Produce and maintain industry-standard laboratory documentation, including laboratory notebooks, data records, and technical reports.
- BIOL 34: Critically analyze scientific interpretations of experimental data in scientific communications.
- BIOL 34: Effectively communicate scientific findings for both the scientific community and a general audience.
- CHEM 10: The student will be able to use chemical theories to explain and predict observable phenomena, using the principles developed in Chemistry 10.

Apply scientific principles and ethical practices to interpret experimental data, evaluate data quality, identify errors, and draw evidence-based conclusions.

- BIOL 30: Apply foundational concepts in molecular biology, cellular biology, and genetics to solve practical problems in biotechnological applications.
- BIOL 30: Analyze and interpret scientific data using laboratory notebooks, tables, and graphical representations.
- BIOL 31: Analyze and interpret experimental results to evaluate data quality, procedural errors, and experimental outcomes.
- BIOL 34: Critically analyze scientific interpretations of experimental data in scientific communications.
- BIOL 34: Distinguish between ethical and unethical behavior in experimental design, data collection, and presentation of scientific results.
- BIOL 36: Apply quality tools and methods to evaluate and improve product and process quality.
- BIOL 36: Evaluate documentation practices for compliance with regulatory requirements in biotechnology settings.
- BIOL 36: Investigate deviations, nonconformances, and other quality-related events and determine appropriate corrective actions.
- BIOL 36: Assess quality control and assurance system components, including auditing, validation, and risk management.
- CHEM 10: The student will demonstrate the ability to solve chemical problems using logical procedures based on well-established scientific principles.
- CHEM 10: The student will be able to use chemical theories to explain and predict observable phenomena, using the principles developed in Chemistry 10.

Required Courses	**Units: 21.0**
BIOL 30[DE] Fundamentals of Biotechnology 1	5.0
BIOL 31 Fundamentals of Biotechnology 2: From Genes to Proteins	5.0
BIOL 34 Science Communication for Regulated Environments	3.0
BIOL 36 Quality Control and Assurance	3.0
CHEM 10 Introductory General Chemistry	5.0
	Total: 21.0

Santa Monica College
Program of Study
Climate Change and Sustainable Food Systems Certificate of Achievement

This Certificate of Achievement program explores the intersection of climate change, food systems, and sustainability, preparing students to understand and address the environmental, social, and economic impacts of a changing climate on food production and distribution. Students examine topics such as climate science fundamentals, sustainable agriculture, food justice, materials management, waste reduction, and regenerative food systems. The program emphasizes systems thinking and applied learning to evaluate how food systems contribute to and are affected by climate change at local, regional, and global scales. Through interdisciplinary coursework and hands-on learning experiences, students develop practical skills applicable to careers in sustainability, environmental stewardship, food systems planning, and climate resilience. This Certificate of Achievement provides a foundational pathway for entry-level employment, internships, and further study in environmental and sustainability-related fields.

Program Learning Outcomes:
Upon completion of this program, students will be able to: 1. Explain core principles of climate science, including the drivers, impacts, and feedback mechanisms of global climate change, and analyze how these processes influence food systems at local and global scales. 2. Evaluate and apply practical sustainability solutions aimed at mitigating and adapting to climate change, demonstrating the ability to identify and describe strategies that improve the resilience of food systems. 3. Integrate scientific knowledge with applied practice by assessing real-world case studies and proposing evidence-based interventions that support climate mitigation and adaptation within agricultural, food supply chain, and community food system contexts.

Required Core Courses	**Units: 4.0**
GEOL 9[DE] Climate Change *Same as: GEOG 9*	3.0
SMM 6 Introduction to Climate & Sustainable Food Systems	1.0

Food Systems	**Units: 3.0-4.0**
ANTHRO 19[DE] The Culture of Food	3.0
AQUA 1[DE] Introduction to Aquaculture: History, Ecology and Sustainability	3.0
AQUA 2 Applications in Aquaculture - System Design, Monitoring and Maintenance	4.0
AQUA 3 Microbiology and Genetics for Aquaculture	4.0
BIOL 9[DE] Environmental Biology	3.0
BIOL 10 Applied Ecology and Conservation Biology	4.0
BOTANY 1[DE] General Botany	4.0
BOTANY 3 Field Botany	4.0
NUTR 1[DE] Introduction To Nutrition Science	3.0
NUTR 7[DE] Food and Culture in America	3.0

Environmental Studies, Business and Politics	**Units: 3.0**
BUS 7[DE] Introduction to Sustainability in Business	3.0
ECON 4[DE] Environmental Economics *Same as: ENVRN 4*	3.0
GEOG 7[DE] Introduction to Environmental Studies *Same as: ENVRN 7*	3.0
GLOBAL 10[DE] Global Issues	3.0
HIST 32[DE] Global Environmental History *Same as: ENVRN 32*	3.0
PHILOS 20[DE] Environmental Ethics *Same as: ENVRN 20*	3.0
POL SC 22 Environmental Politics and Policies *Same as: ENVRN 22*	3.0
PSYCH 40[DE] Environmental Psychology *Same as: ENVRN 40*	3.0
SMM 2[DE] Culture and Zero Waste	3.0
SMM 3[DE] Sustainable Materials Management and Zero Waste for Communities	3.0
SMM 4[DE] Sustainable Materials Management and Zero Waste in Business	3.0

Total: 10.0-11.0

Labor Market Analysis: 0303.00 – Environmental Technology 01.0301 – Agricultural Production Operations, General

Climate and Environmental Technology for Sustainable Food Systems

Certificate requiring 8 to <16 semester units

Los Angeles Center of Excellence, March 2026

Program Endorsement:	Endorsed: All Criteria Met ☐	Endorsed: Some Criteria Met ☒	Not Endorsed ☐
Program Endorsement Criteria			
Supply Gap:	Yes ☑	No ☐	
Living Wage: (Entry-Level, 25th)	Yes ☐	No ☑	
Education:	Yes ☑	No ☐	
Emerging Occupation(s)			
Yes ☐		*No* ☑	

SUMMARY

This report analyzes whether local labor market demand is being met by community college programs aligned with the identified middle-skill occupations[1] or whether a shortage of workers exists. Labor market demand is measured by annual job openings while education supply is measured by the number of awards (degrees and certificates) conferred on average each year.

Based on the available data, there appears to be a supply gap for the three identified middle-skill occupations in the region. While entry-level wages are lower than the self-sufficiency standard wage in both Los Angeles and Orange counties, more than one-third of current workers in the field have completed an associate degree or less educational attainment.

<u>Recommendation:</u> Due to two of three program endorsement criteria being met, the Los Angeles Center of Excellence for Labor Market Research (LA COE) endorses this proposed program.

Key Findings

Supply Gap

- 412 annual job openings are projected in the region through 2029. This number is greater than the three-year average of 112 awards conferred by educational institutions in the region.

[1] Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree. The COE classifies middle-skill jobs as the following:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

Living Wage

- All three occupations have entry-level wages **below** Los Angeles County's self-sufficiency standard hourly wage ($24.03/hour).[2]

Educational Attainment

- 70% of the annual job openings typically require a high school diploma or equivalent for middle-skill occupations related to environmental technology in the LA/OC region.
- 22%-42% of workers in the field have completed some college or an associate degree, according to national educational attainment data.
    - 73%-88% of workers in the field have completed an associate degree or less educational attainment.

Community college supply

- 9 community colleges issued awards related to environmental technology in the greater LA/OC region.
- 89 awards (degrees and certificates) were conferred on average each year between 2023 and 2025.

Other postsecondary supply

- 1 educational institution in the LA/OC region has conferred awards in a program related to environmental technology over the past three years.
- 23 awards were conferred on average each year by other postsecondary institutions throughout the greater LA/OC region between 2022 and 2024.

TARGET OCCUPATIONS

LA COE prepared this report to provide regional labor market and postsecondary supply data related to three middle-skill occupations. For full occupation descriptions, please see Appendix.

- ***Farmers, Ranchers, and Other Agricultural Managers* (11-9013)**[3]
- ***Agricultural Technicians* (19-4012)**[4]
- ***First-Line Supervisors of Farming, Fishing, and Forestry Workers* (45-1011)**[5]

OCCUPATIONAL DEMAND

Exhibit 1 shows the five-year occupational demand projections for these middle-skill environmental technology occupations. In the greater Los Angeles/Orange County region, the number of jobs related to these occupations is projected to decrease by 4% through 2029. However, there will be more than 400 job openings per year through 2029 due to retirements and workers leaving the field. The majority of jobs in 2024 for these middle-skill environmental technology occupations (74%) were located in Los Angeles County.

[2] Center for Women's Welfare, University of Washington. (2024). *The self-sufficiency standard for California 2024.* http://selfsufficiencystandard.org/California.
[3] Farmers, Ranchers, and Other Agricultural Managers (bls.gov)
[4] Agricultural and Food Science Technicians (bls.gov)
[5] Farming, Fishing, and Forestry Occupations (bls.gov)

Exhibit 1: Current employment and occupational demand, Los Angeles and Orange counties[6]

Geography	2024 Jobs	2029 Jobs	2024-2029 Change	2024-2029 % Change	Annual Openings
Los Angeles	2,511	2,485	(26)	(1%)	309
Orange	874	763	(111)	(13%)	103
Total	**3,385**	**3,248**	**(137)**	**(4%)**	**412**

Detailed Occupation Data

Exhibit 2 displays the current employment and projected occupational demand for each of the target occupations in Los Angeles County. The average percentage of workers aged 55+ across all occupations in the Los Angeles/Orange County region is 26%; occupations with a larger share of workers aged 55 and older typically have greater replacement needs to offset the amount of impending retirements. On average, 81% of workers across all occupations in California are employed full-time. Occupations with a lower-than-average percentage of full-time workers may have less employment security but may see increased activity in the gig economy.

Exhibit 2: Detailed employment and occupational demand, Los Angeles County[7]

Occupation	2024 Jobs	2029 Jobs	5-Yr % Change	Annual Openings	% Aged 55 and older	% Full Time Workers
Farmers, Ranchers, and Other Agricultural Managers	1,245	1,222	(2%)	131	42%	63%
Agricultural Technicians	612	616	1%	89	23%	100%
First-Line Supervisors of Farming, Fishing, and Forestry Workers	654	648	(1%)	89	30%	86%
Total	**2,511**	**2,485**	**(1%)**	**309**	**-**	**-**

WAGES

The labor market endorsement in this report considers the entry-level hourly wages for these middle-skill environmental technology occupations in Los Angeles County as they relate to the county's self-sufficiency standard wage. Orange County wages are included below in order to provide a complete analysis of the greater Los Angeles/Orange County region.

Los Angeles County

All three occupations have entry-level wages below the self-sufficiency standard wage for one adult ($24.03 in Los Angeles County). Typical entry-level hourly wages are in a range between

[6] Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.
[7] Ibid.

$16.00 and $20.38. (Exhibit 3). Experienced workers can expect to earn wages between $32.01 and $32.75, which are higher than the self-sufficiency standard.

Exhibit 3: Earnings for occupations in Los Angeles County

Occupation	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)	Median Annual Earnings*
Farmers, Ranchers, and Other Agricultural Managers	$16.00	$18.81	$32.07	$39,100
Agricultural Technicians	$20.38	$24.42	$32.75	$50,800
First-Line Supervisors of Farming, Fishing, and Forestry Workers	$18.39	$24.45	$32.01	$50,900

*Rounded to the nearest $100

Orange County

All three occupations have entry-level wages below the self-sufficiency standard wage for one adult ($27.13 in Orange County). Typical entry-level hourly wages are in a range between $16.00 and $19.10 (Exhibit 4). Experienced workers can expect to earn wages between $30.76 and $31.74, which are higher than the self-sufficiency standard.

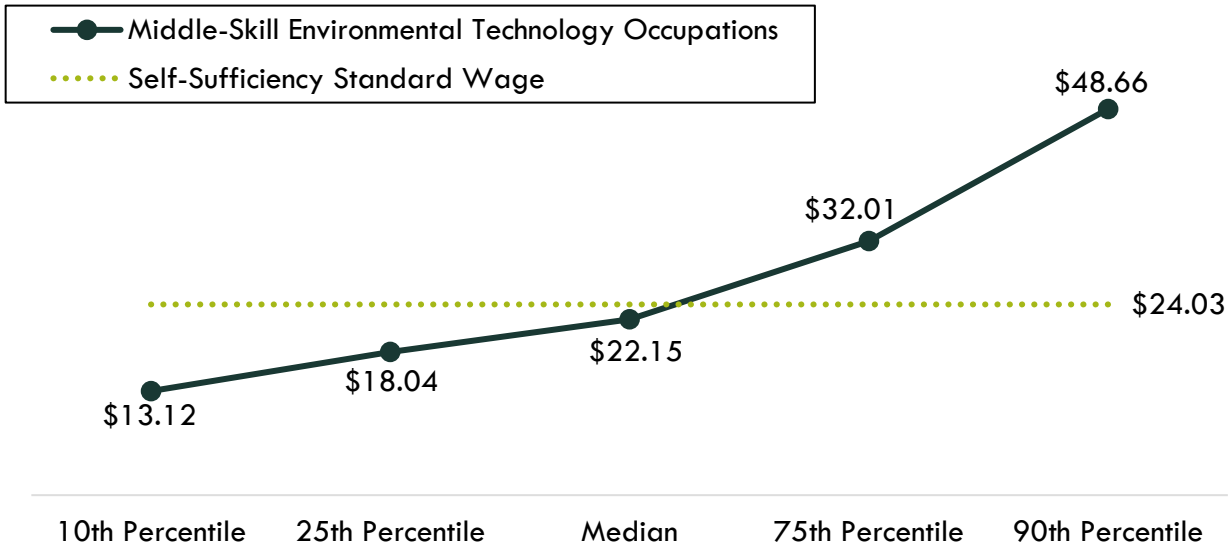
Exhibit 4: Earnings for occupations in Orange County

Occupation	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)	Median Annual Earnings*
Farmers, Ranchers, and Other Agricultural Managers	$16.00	$18.13	$31.74	$37,700
Agricultural Technicians	$19.10	$22.91	$30.76	$47,600
First-Line Supervisors of Farming, Fishing, and Forestry Workers	$17.80	$23.68	$30.97	$49,300

*Rounded to the nearest $100

Across the greater Los Angeles and Orange County region, the average entry-level hourly earnings for the occupations in this report are $18.04; this is below the living wage for one single adult in Los Angeles County ($24.03). Exhibit 5 shows the average hourly wage for the occupations in this report, for entry-level to experienced workers.

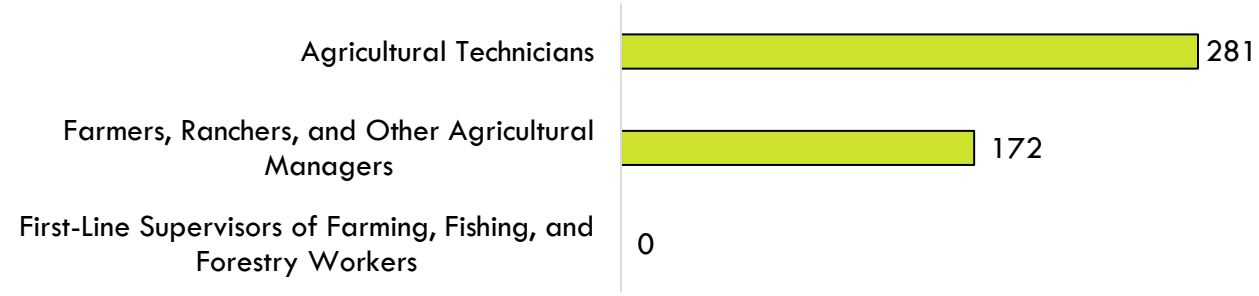
Exhibit 5: Average hourly earnings for target occupations, Los Angeles and Orange counties



JOB POSTINGS

There were 453 online job postings related to middle-skill environmental technology occupations listed in the past 12 months in Los Angeles and Orange counties. Exhibit 6 displays the number of job postings by occupation. The majority of job postings (62%) were for *agricultural technicians*, followed by *farmers, ranchers, and other agricultural managers* (38%). There were no job postings for *first-line supervisors of farming, fishing, and forestry workers*.

Exhibit 6: Job postings by occupation (last 12 months), Los Angeles and Orange counties



Job postings were analyzed for the most common job titles, skills, and employers associated with the target occupations in this report (Exhibit 7).

Exhibit 7: Most commonly requested job titles, skills and employers in job postings, Los Angeles and Orange counties

Top Job Titles	Top Skills	Top Employers
• Agricultural technicians • Food science technicians • Continuous improvement technicians • Quality control technicians • Farmers market managers • Horticulture technicians	• Food safety and sanitation • Food manufacturing • Food services • Good manufacturing practices • Lifting ability • Agriculture • Packaging and labeling	• State of California • Kimco Staffing Services* • Vision Staffing Solutions* • Activ8 Recruitment & Solutions* • California Department of Food & Agriculture • Jessie Lord Bakery

*Staffing company

In the greater Los Angeles/Orange County region, 37% of the target job postings listed a minimum educational requirement. Exhibit 8 details the number and percentage of job postings by educational level.

Exhibit 8: Education levels requested in job postings for target occupations, Los Angeles and Orange counties

Education Level	Job Postings	% of Job Postings
Bachelor's degree	51	31%
Associate degree	10	6%
High school diploma or vocational training	106	63%

EDUCATIONAL ATTAINMENT

In the greater Los Angeles/Orange County region, the majority of annual job openings (70%) typically require a high school diploma or equivalent (Exhibit 9). While the national-level data indicates between 22% and 42% of workers in the field have completed some college or an associate degree as their highest level of educational attainment, 73%-88% completed an associate degree or less education. The Bureau of Labor Statistics (BLS) lists the following typical entry-level education levels for the occupations in this report:

Exhibit 9: Entry-level education preferred by employers nationally, Bureau of Labor Statistics

Occupation	Education Level
Agricultural Technicians	Associate degree
Farmers, Ranchers, and Other Agricultural Managers	High school diploma or equivalent
First-Line Supervisors of Farming, Fishing, and Forestry Workers	High school diploma or equivalent

EDUCATIONAL SUPPLY

Community College Supply

Exhibit 10 shows the annual and three-year average number of awards conferred by community colleges in programs that have historically trained for the occupations of interest. The colleges with the most completions in the region are Santa Monica, Mt. San Antonio, and Rio Hondo.

Exhibit 10: Regional community college awards (certificates and degrees), 2023-2025

TOP Code	Program	College	2022-23 Awards	2023-24 Awards	2024-25 Awards	3-Year Average
0101.00	Agriculture Technology and Sciences, General	LA Pierce	-	1	1	1
		Mt San Antonio	-	1	1	1
		LA Subtotal	**-**	**2**	**2**	**1**
		Supply Subtotal/Average	**-**	**2**	**2**	**1**
0103.00	Plant Science	LA Pierce	2	1	2	2
		Mt San Antonio	12	17	12	14
		Pasadena	2	1	3	2
		LA Subtotal	**16**	**19**	**17**	**17**
		Saddleback	-	3	-	1
		OC Subtotal	**-**	**3**	**-**	**1**
		Supply Subtotal/Average	**16**	**22**	**17**	**18**
0303.00	Environmental Technology	Mt San Antonio	-	1	1	1
		Rio Hondo	11	11	12	11
		Santa Monica	30	42	89	54
		LA Subtotal	**41**	**54**	**102**	**66**
		Irvine	1	2	4	2
		Orange Coast	-	-	1	0
		Saddleback	-	-	3	1
		Santiago Canyon	-	1	-	0
		OC Subtotal	**1**	**3**	**8**	**4**
		Supply Subtotal/Average	**42**	**57**	**110**	**70**
		Supply Total/Average	**58**	**81**	**129**	**89**

Exhibit 11 displays the community college awards broken down by award type. In this case, the majority of awards issued by community colleges are noncredit awards (45%).

Exhibit 11: Community college awards by award type, 2023-2025

Award Type	# of Awards	% of Awards
A.A./A.A.-T./A.S./A.S.-T degrees	30	34%
Certificates	19	21%
Noncredit awards	40	45%
Total	**89**	**100%**

Other Postsecondary Supply

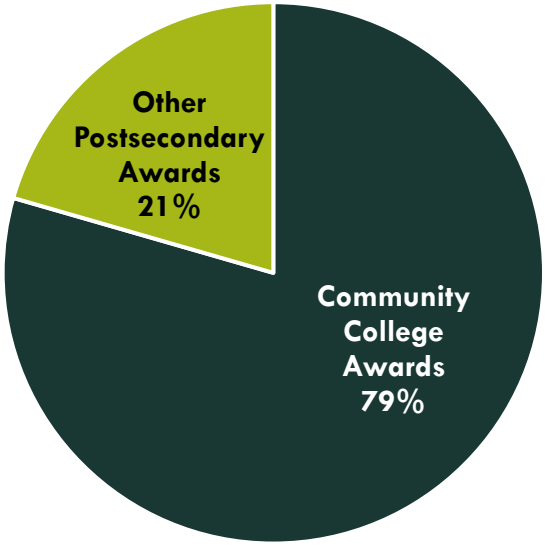
For a comprehensive regional supply analysis, it is important to consider the supply from other institutions in the region that provide training programs for environmental technology. Exhibit 12 shows the number of awards conferred by this institution in relevant programs. Due to different data collection periods, the most recent data is from 2022 to 2024. Between 2022 and 2024, other postsecondary college institutions in the region conferred an average of 23 bachelor's awards.

Exhibit 12: Other regional postsecondary awards, 2022-2024

CIP Code	Program	Postsecondary Institution	2021-22 Awards	2022-23 Awards	2023-24 Awards	3-Year Average
01.0102	Agribusiness/ Agricultural Business Operations	CSPU-Pomona	22	31	16	23
Supply Total/Average			**22**	**31**	**16**	**23**

Exhibit 13 shows the proportion of community college awards conferred in the greater Los Angeles/Orange County region compared to the number of other postsecondary awards for the programs in this report. The majority of awards conferred in these programs are awarded by community colleges in the greater Los Angeles/Orange County region.

Exhibit 13: Percentage of community college awards compared to other postsecondary institution awards in the Los Angeles/Orange County region



APPENDIX: OCCUPATION DESCRIPTIONS

LA COE prepared this report to provide regional labor market supply and demand data related to these target occupations:

- ***Farmers, Ranchers, and Other Agricultural Managers* (11-9013)** Plan, direct, or coordinate the management or operation of farms, ranches, greenhouses, aquacultural operations, nurseries, timber tracts, or other agricultural establishments. May hire, train, and supervise farm workers or contract for services to carry out the day-to-day activities of the managed operation. May engage in or supervise planting, cultivating, harvesting, and financial and marketing activities.[8]
- ***Agricultural Technicians* (19-4012)** Work with agricultural scientists in plant, fiber, and animal research, or assist with animal breeding and nutrition. Set up or maintain laboratory equipment and collect samples from crops or animals. Prepare specimens or record data to assist scientists in biology or related life science experiments. Conduct tests and experiments to improve yield and quality of crops or to increase the resistance of plants and animals to disease or insects.[9]
- ***First-Line Supervisors of Farming, Fishing, and Forestry Workers* (45-1011)** Directly supervise and coordinate the activities of agricultural, forestry, aquacultural, and related workers.[10]

[8] Farmers, Ranchers, and Other Agricultural Managers (bls.gov)
[9] Agricultural and Food Science Technicians (bls.gov)
[10] Farming, Fishing, and Forestry Occupations (bls.gov)

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CENTER OF EXCELLENCE
FOR LABOR MARKET RESEARCH

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DATA SOURCES

- O*NET Online
- Lightcast (formerly Emsi)
- Bureau of Labor Statistics (BLS)
- California Employment Development Department, Labor Market Information Division, OES
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- Self-Sufficiency Standard at the Center for Women's Welfare, University of Washington
- Chancellor's Office Curriculum Inventory (COCI 2.0)

Important Disclaimer: All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. Efforts have been made to qualify and validate the accuracy of the data and the reported findings; however, neither the Centers of Excellence, COE host District, nor California Community Colleges Chancellor's Office are responsible for applications or decisions made by recipient community colleges or their representatives based upon components or recommendations contained in this study.
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Centers of Excellence for Labor Market Research, Economic and Workforce Development Program

Santa Monica College
Program of Study
Geology AS-T

The Associates of Science Transfer degree in Geology provides students with the foundational knowledge and lower-division coursework needed to transfer to a CSU and complete a bachelor's degree in a Geoscience major. Students will have the foundational math, chemistry, and geology courses along with their IGETC requirements completed, allowing students to seamlessly transition to a CSU and complete their upper division courses.

Associate Degree for Transfer Requirements:

- Completion of 60 semester units or 90 quarter units of degree-applicable courses,
- Minimum overall grade point average of 2.0,
- Minimum grade of “C” (or “P”) for each course in the major, and
- Completion of Cal-GETC

Program Learning Outcomes:

Recognize how major events in Earth’s history are used to delineate geologic time and apply that to explain Earth’s history.

- GEOL 4: Demonstrate a conceptual understanding of fundamental geologic concepts, principles, and interactions of Earth's systems.
- GEOL 4: Students will recognize the Earth is a dynamic planet shaped by physical agents of change.
- GEOL 5: Demonstrate and apply an understanding of the governing principles and theories that geologists use, including age-dating techniques, interpretation of stratigraphic columns, use of paleogeographic maps, and facies analysis to interpret Earth’s history.
- GEOL 5: Students will discuss how changes on Earth's surface over geologic time correlate with mass extinctions and evolutionary advances.
- GEOL 5: Students will apply relative and absolute age dating principles to reconstruct the geologic history of a geologic setting.
- GEOL 5: Identify the physical characteristics of sedimentary rocks and the major phyla of invertebrates to analyze Earth’s geologic history.
- GEOL 5: Demonstrate an understanding of the major geological and biological events that characterize the major divisions of geologic time.

Apply the theory of plate tectonics to explain the physical changes in the structures of the Earth.

- GEOL 4: Students will identify the major features on the Earth and understand the geological processes that formed them.
- GEOL 4: Apply fundamental geologic concepts to differentiate plate tectonic settings, identify mineral and rock samples, and evaluate geologic issues.
- GEOL 4: Demonstrate a conceptual understanding of fundamental geologic concepts, principles, and interactions of Earth's systems.
- GEOL 4: Students will recognize the Earth is a dynamic planet shaped by physical agents of change.

Demonstrate map reading, mineral and rock identification, and identification of geologic hazards.

- CHEM 11: The student will be able to relate microscopic theories to macroscopic observations specifically using the chemical principles developed in Chemistry 11 to explain observable phenomena.
- CHEM 12: The student will be able to relate microscopic theories to macroscopic observations specifically using the chemical principles developed in Chemistry 12 to explain observable phenomena.
- GEOL 4: Apply fundamental geologic concepts to differentiate plate tectonic settings, identify mineral and rock samples, and evaluate geologic issues.
- GEOL 5: Identify the physical characteristics of sedimentary rocks and the major phyla of invertebrates to analyze Earth’s geologic history.

Complete the preparatory coursework necessary to successfully complete upper-division geology courses.

- CHEM 11: The student will demonstrate the ability to solve scientific problems by following logical procedures based on well-established scientific principles.
- CHEM 11: (a)The student will follow written procedures used in the general chemistry laboratory accurately and safely. (b)When completing a lab report, the student will correctly apply the scientific method by making reasonable estimates of experimental uncertainties and drawing appropriate conclusions based on the gathered data and scientific principles.

- CHEM 11: The student will be able to relate microscopic theories to macroscopic observations specifically using the chemical principles developed in Chemistry 11 to explain observable phenomena.
- CHEM 12: The student will demonstrate the ability to solve scientific problems by following logical procedures based on well-established scientific principles.
- CHEM 12: (a) The student will follow written procedures used in the general chemistry laboratory accurately and safely. (b)When completing a lab report, the student will correctly apply the scientific method by making reasonable estimates of experimental uncertainties and drawing appropriate conclusions based on the gathered data and scientific principles.
- CHEM 12: The student will be able to relate microscopic theories to macroscopic observations specifically using the chemical principles developed in Chemistry 12 to explain observable phenomena.
- MATH 7: Given an algebraic or trigonometric function, evaluate and apply limits and prove basic limit statements.
- MATH 7: Given an algebraic or trigonometric function, differentiate the function and solve application problems involving differentiation.
- MATH 7: Given an algebraic or trigonometric function, integrate the function and solve application problems involving integration.
- MATH 8: Set up and solve applications problems involving limits, areas, volumes, arc length, indeterminate forms, center of mass and improper integrals using differentiation and integration techniques with transcendental functions.
- MATH 8: Determine the divergence or type of convergence of various infinite series, find the domain (interval of convergence) of power series and derive and apply Taylor series.
- MATH 8: Graph and analyze curves using parametric equations and/or polar coordinates and solve applications involving functions in either polar or parametric form.

Required Courses:	**Units: 28.0**
CHEM 11[DE] General Chemistry I	5.0
CHEM 12[DE] General Chemistry II	5.0
GEOL 4[DE] Physical Geology with Lab	4.0
GEOL 5[DE] Historical Geology with Lab	4.0
MATH 7[DE] Calculus 1	5.0
MATH 8[DE] Calculus 2	5.0
	Total: 28.0

Santa Monica College
Program of Study
Website Development Management Certificate of Achievement

This program provides students with the knowledge needed to develop website projects in a real-world setting. Students learn how to develop websites while applying the skills needed to plan and budget resources in development projects from conceptual design to deployment.

Program Learning Outcomes:
Plan the development of website from conceptual design to deployment.

- CIS 67: Acting as a WordPress site administrator, students will use WordPress to build out a complete content management system that will include blogs, webpages, a WordPress theme, WordPress plugins, chats, social sharing, and various forms of media and photo galleries.
- CIS 9A: Use Project Management Software to track progress, schedules and resources.
- CIS 9B: Use Project Management Software to adjust variances.
- CS 87A: Applying logical analysis, students will design, build and debug programming projects in Python.

Budget resources in the development of a website from conceptual design to deployment.

- CIS 67: Students will design and build a custom WordPress theme that will be built in full compliance with W3C standards, will have enhanced web typography, and will be customized with WordPress widgets and plugins.
- CIS 9A: Use Project Management Software to track progress, schedules and resources.
- CIS 9B: Use Project Management Software to adjust variances.
- CS 87A: Using the built-in functions of Python, students will be able to build data processing application.

Required Courses:	**Units: 12.0**
CIS 9A[DE] Technology Project Management I	3.0
OR	
CS 9A[DE] Technology Project Management I	3.0

CIS 9B[DE] Technology Project Management II	3.0
OR	
CS 9B[DE] Technology Project Management II	3.0

CIS 59A[DE] Dreamweaver I	3.0
CIS 67[DE] WordPress	3.0
	Total: 12.0